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CHEMICAL AND BIOLOGICAL WEAPONS PROLIFERATION

HEARING

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL FINANCE AND MONETARY POLICY

OF THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

HOW TO CONTROL THE PRODUCTION AND USE AND PROLIFERATION OF CHEMICAL AND BIOLOGICAL WEAPONS

JUNE 22, 1989

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CHEMICAL AND BIOLOGICAL WEAPONS PROLIFERATION

THURSDAY, JUNE 22, 1989

U.S. SENATE, SUBCOMMITTEE ON INTERNATIONAL FINANCE AND MONETARY POLICY, COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The subcommittee met at 9:10 a.m., pursuant to notice, in room SD-538, Dirksen Senate Office Building, Senator Paul S. Sarbanes (chairman of the subcommittee) presiding.

Present: Senators Sarbanes, Dixon, Wirth, Garn, Heinz, and Bond.

OPENING STATEMENT OF SENATOR SARBANES

Senator SARBANES. The Subcommittee will come to order.

This morning we are addressing the very urgent problem of how to control the production, use, and proliferation of chemical and biological weapons.

This obviously is a matter of increasing concern because of the growing evidence in recent years of the use of chemical weapons and their expanding proliferation.

United Nations investigative reports confirm the use of chemical weapons in the Iran-Iraq War and the use of such weapons in a number of other countries, including Afghanistan and Southeast Asia.

Last October the United States publicly charged that Libya was constructing the largest chemical weapons facility in the Third World, comprising of both a chemical manufacturing plant and metal working plant capable of producing munition parts, and that companies in leading industrial countries, so-called Western industrial countries, played important roles in the construction of this facility.

There have been efforts at the international level to come to grips with this problem. The UN Conference on Disarmament in Geneva has been a forum for seeking to negotiate a global ban on the production, stockpiling and use of chemical weapons.

This past January an international conference was held in Paris at which 149 nations were represented, and the final declaration of that conference condemned chemical weapons use and restated the need for a global ban on chemical weapons production and stockpiling.

In addition, the so called Australia Group of 20 member nations of the OECD was formed in 1984 and is seeking to establish voluntary export controls on certain critical chemicals.

In addition to these international efforts, legislation has been introduced in the Senate which would impose economic sanctions on foreign countries that use chemical and biological weapons and on companies which assist countries to produce such weapons.

Here to comment this morning on appropriate U.S. policy and to address this pressing issue are Under Secretary of State for Security Assistance, Reginald Bartholomew and Deputy Under Secretary of Commerce for Export Administration, Joan McEntee.

Following their testimony, we will hear from a second panel of witnesses made up of Elisa Harris, Guest Scholar at the Brookings Institution, Lewis Dunn, former Assistant Director of the U.S. Arms Control and Disarmament Agency and Max Turnipseed, Special Trade Adviser to the Chemical Manufacturers Association.

We are very pleased to have all of these distinguished witnesses here with us this morning to address this very important issue.

Before I go to our first two witnesses from the Administration, I'll turn to Senator Heinz and then Senator Garn if they have any opening comments.

Senator HEINZ. Mr. Chairman, Senator Garn is really the Ranking Member of the Committee, and I would be pleased to yield to him first for any comments.

Senator GARN. Well, I may be the Ranking Member of the Committee, but I'm not even a member of this Subcommittee.

Senator HEINZ. Well, maybe I should reconsider, but it stands. [Laughter.]

Senator GARN. I have no opening statement. I'm a cosponsor of the legislation and interested in this subject. It is of vital importance, and I thank the Chairman and Senator Heinz for allowing me to sit in. I will have a statement that I will submit for the record, Mr. Chairman.

Senator SARBANES. Very good. It will certainly be included.

OPENING STATEMENT OF SENATOR JAKE GARN

Senator GARN. I welcome the opportunity to join the Subcommittee members this morning in hearing the positions of the Administration and expert witnesses on the issue of chemical and biological weapons transfer. Although no longer a member of this Subcommittee, I remain interested and involved in issues of technology transfer.

I would like to take a moment to thank Senators Heinz and Sarbanes for holding this hearing. As you know, during my 14 years in the U.S. Senate, it has been a primary goal of mine to stop the transfer of Western weapons and technology into the arsenals of our adversaries. Experience has shown that while technology security is vital, it is extremely difficult to achieve and protect. We are attempting to control the spread that, in many cases, is relatively unsophisticated, but still deadly.

S. 8, a bill that many members of this Subcommittee have cosponsored, attempts to ensure that we do not arm terrorists or terrorist states with weapons capable of mass destruction. This bill also ensures that we stop the transfer and spread of weapons that the civilized nations agreed not to use at the 1925 Paris Conference. This was reaffirmed by 149 nations at the Paris Conference last month.

Use of sanctions is sure to raise voices of protest from governments and industry. But, just as in the Toshiba-Kongsberg case, we must send a signal to the world to realize that there are some crimes the United States will not tolerate. We must stand ready to take unilateral action to stop the export of such destructive technology.

As we begin this discussion of chemical weapons, I have to express concern about the condition of our export control system. The Committee has yet to receive nominations for key Commerce Department export control officials, including the Under Secretary for Export Administration and the Assistant Secretary for Licensing. The policy process seems to be bogged down in redtape. The Secretary of Commerce, who is charged with operation of our export licensing system, withdrew from this hearing owing to the press of business, leaving a new Deputy Under Secretary to comment on an issue that is supposed to be a Presidential priority. Neither the State Department nor Commerce Department witnessess have managed to say anything useful about S. 8 in their testimony, despite the fact that the bill addresses a Presidential priority and that it is an initiative of the Republican Leader and senior Members of the Banking Committee.

I hope that these conditions are not an indication that export control policy will be a low priority of the Bush Administration. We may look back on the Reagan Administration, a time when many people complained of interagency gridlock on export controls, as a time when at least someone cared about the issue.

I welcome the opportunity to hear the views of the Administration and my colleagues who are searching for a solution to this threat to world peace.

Thank you, Mr. Chairman.

Senator SARBANES. Senator Heinz.

OPENING STATEMENT OF SENATOR HEINZ

Senator HEINZ. Mr. Chairman, let me commend you on holding these hearings. As you may recollect, when Senator Dole and nine other Senators, including myself, introduced S. 8, which is in part the subject of these hearings, our primary concern was to provide for sanctions against companies that have aided and abetted the proliferation chemical and biological weapons.

The demand for that legislation grew out of the use of chemical weapons in the Iran-Iraq War and the well-known charges that Libya had assistance from several Western European and Japanese companies in developing their CW capability.

Now while I do support the Department of Commerce's decision to extend foreign policy controls on chemical weapons for yet another year in response to those events, I must tell you I remain disappointed at the absence of any mention in the annual report of sanctions as a tactic to curb the illegal acquisition and use of chemical weapons.

Sanctions such as those embodied in S. 8 deserve careful consideration because of the intractability of the problem and the potential dangers Americans face directly.

For example, U.S. Forces stationed in the Middle East are endangered by the political willingness of these countries to actually use poisoned gas against each other or other countries in the region with closer ties to the United States, such as Egypt, Israel, Jordan or Saudi Arabia.

Now without question, I would be the first to admit that this is a difficult problem, and we have obviously failed to control the proliferation of chemical weapons, especially in the Middle East. But while this failure stems in part from the face that many of the chemicals in question have legitimate uses, it is also explained by the reluctance of some of our closest allies to put into place a formal multilateral control system to prevent the sale of chemical agents and precursors.

Clearly if we are going to be serious about stemming the spread of chemical and biological weapons, we have got to do so on a variety of fronts and with a variety of initiatives. Some of them are unilateral, and that is what S. 8 is all about, but others have to be multilateral.

Former President Reagan took the latter approach in pushing for a conference on chemical weapons under the auspices of the 1925 Geneva Protocol back in January of this year. The Protocol prohibits the use of chemical weapons, but not the possession or the production of chemical agents. And as a result, that loophole made it possible for such signatories to the Protocol, as Iran, Iraq, Libya and Syria to actively seek to enhance their chemical warfare capabilities.

So I am not optimistic at all that we will be able to make any progress without closing that loophole, and I would also have to admit that closing that loophole won't be easy.

When we had hearings on this subject in the Governmental Affairs Committee last month, I suggested that a useful alternative place to start would be with the Australia Group, which is the only international organization dedicated to preventing the spread of chemical and biological weapons. I recommended we encourage this group to transform itself from an informal group to a formal organization with a decision-making structure which would at least, in my judgment, equip it to meet the challenges of the next decade.

I have made a series of suggestions about the Australia Group: that it should have a permanent Secretariat, it should move toward a binding decision-making system, even if unanimity would be the basis for decisions; and a number of other methods of strengthening the group should be explored ranging from assigning embassy officers in Canberra responsibility for CBW liaison work to maintaining watch lists and a variety of suggestions which I will get into later, Mr. Chairman.

Mr. Chairman, the reason I mention those ideas though is that I hope the Administration, and I see Reginald Bartholomew is here, will consider these suggestions seriously. I will certainly be raising them in the course of these hearings as we take up S. 8.

Thank you.

Senator SARBANES. Thank you very much.

I see we have been joined by Senator Bond.

Do you have an opening statement you would like to make?

OPENING STATEMENT OF SENATOR BOND

Senator **Bond**. Thank you, Mr. Chairman.

I will make a very brief statement because I think it's with a combination of out outrage and concern that we in the United States have watched the resurgence of the use of chemical weapons in Southeast Asia, Iraq, Afghanistan and most recently in the Soviet Union. We have seen chemical weapons used usually against innocent civilians.

In addition, we have seen countries, including Libya and Iraq undertake efforts to develop large plants capable of producing massive quantities of chemical and biological weapons.

We must join with other nations throughout the world to condemn those who have used chemical and biological weapons. Also, we must be working to find ways to curb the proliferation of these weapons of destruction.

For more than half a century we have managed to keep these horrible weapons off the battlefield. It is in the interest of all people in the world to see that we do not let that change now.

We all know that this will not be an easy task because the technology used to produce chemical weapons is not terribly different from that used to produce fertilizers and other common industrial chemicals, but I believe we can and must craft legislation which will give the President the new tools needed to use in condemning nations that use chemical and biological weapons and in sanctioning companies that help spread chemical weapons technology without impairing the rights or competitiveness of U.S. industry.

Unfortunately, Mr. Chairman, I have two other Committee meetings that I'm going to have to attend this morning, but I assure you that I am looking forward to reviewing the testimony of today's witnesses and reading the transcript of the answers and discussions following that.

But I look forward to working with you and members of this Committee on what I regard as a very important issue.

I thank you for holding this hearing, sir.

Senator **Sarbanes**. Well, of course, we all understand this press of conflicting engagements. It's a problem we all have to wrestle with, and we very much appreciate the Senator being here at the outset this morning. I know of his own interest in this issue, and it is a desire shared by all of us to come to grips with it.

With that, we will go to the panel, and we'll turn first to the Under Secretary of State for Security Assistance, Science and Technology, Reginald Bartholomew.

Mr. Secretary, we would be happy to hear from you.

STATEMENT OF REGINALD BARTHOLOMEW, UNDER SECRETARY OF STATE FOR SECURITY ASSISTANCE, SCIENCE AND TECHNOLOGY

Mr. **Bartholomew**. Mr. Chairman, I'm happy to be here.

I have submitted a prepared statement and, with your indulgence, I would propose to make a few brief opening remarks outlining our policy and addressing the question of legislation in that context, and then turning immediately to your questions, which it seems to me would be the most focused and interesting part.

Senator **Sarbanes**. We will include the full statement in the record; why don't you proceed with your summary of it and address the issues as you wish.

Mr. **Bartholomew**. Mr. Chairman, eliminating these weapons, chemical weapons and stopping their proliferation is of the highest priority to President Bush and Secretary Baker. I think that they have made this very clear, both in terms of their public statements and indeed in terms of the guidance, injunctions and direction that has been provided to the Administration as a whole.

I don't need to delineate the problems these weapons present and the way they bear on United States' interests, nor the sense of responsibility for leadership in this area that we as Americans feel.

When I speak of this American sense of responsibility for leadership, and when I speak of the way our own interests are impacted, I of course would immediately underscore that others share this interest, others in the world share this interest to the full extent that we do, and in some cases I would argue even in a more urgent and more direct manner, and that the heart of policy in this area is that we cannot solve the problem without full-scale international cooperation.

We cannot solve the problem in this area or reach our objectives in this area unless other governments can be convinced that this is not the path to security, and unless other governments can be convinced that there is no interest in providing this capability directly or indirectly to other countries.

For that reason, we are trying to follow an integrated strategy, which is a multilateral strategy focused on getting the widest possible cooperation from governments where these objectives are concerned.

The keystone of that strategy is obviously the chemical weapons ban that we are now seeking to negotiate in Geneva. It is a matter of priority for us to reach as quickly as possible a comprehensive, effectively verifiable and truly global ban on these chemical weapons, and we think that that is ultimately the best hope and needs to be the keystone of any effort to constrain these weapons.

There are some difficult issues remaining, particularly in the area of verification, but as President Bush declared at the NATO Summit, we are committed to solving them as quickly as possible.

For our part in terms of our own direct responsibility as a nation, we have also taken a number of unilateral measures to get at the problem of chemical weapons proliferation. We exercise quite stringent foreign policy export controls where this trade is concerned, and we have recently taken steps inside the government to create structures that will help us in tracking information on this, in tracking possible actions where these kinds of cases are concerned and that will back up the efforts that we make in the licensing area to control the flow of this material and technology to countries of concern.

But as I said earlier, Mr. Chairman, this is one area where the United States cannot act alone, and this is one area where the United States cannot do the job by itself. By definition it has to be approached multilaterally, and here one of the main instruments is indeed, as Senator Heinz referred to, the Australia Group. This is, as you know, a group of 19 industrialized nations which meet twice a year in an effort to develop and further improve among themselves the effectiveness of various export controls on dual-use chemicals as well as examining ways to curb the illegal use of chemical weapons.

These efforts are principally focused, together with the chemical industries of the countries involved, on suspected transactions, and in particular with the chemical weapons programs of Iran, Iraq, Libya and Syria.

These efforts and those of the Australia Group have had some success in curbing proliferation and in imposing restraints. I cannot say to you that they have done all of the job, and I cannot say that would-be proliferators still cannot make an effort to simply circumvent these controls in this and other areas.

Looking beyond this, as I think you know, Mr. Chairman, at the opening of the CFE Talks on March 9th in Vienna, Secretary Baker issued a call for an international conference of governments and the chemical industry, which Australia has agreed to host, and that conference is now in the process of being organized and will be taking place on September 18th to the 22nd of this year in Canberra.

Our hope is that that conference will establish the basis for a dialogue, a better dialogue, a further dialogue between governments and industry on what we can jointly and separately do to control trade and the movement of CBW precursors and technology in international commerce, and indeed to contribute to the negotiations on a chemical weapons ban now underway in Geneva.

We are also engaged, we the United States in a concerted diplomatic effort to try to block the acquisition of chemical weapons where certain countries are concerned.

I might say that in this regard several countries, partly as a result of our efforts, have taken significant steps recently to prevent further foreign assistance to the states that are aiming to acquire a chemical weapons capability. We have indeed in this context succeeded in encouraging a number of allies to adopt more effective and more stringent export controls on CBW precursors.

On the Rabta case, I think we have in particular succeeded to date in preventing Libya from achieving full-scale production at that plant, and that said, we cannot, Senator Heinz, afford, and we recognize this, to relax any of our efforts and any of our vigilance in this regard.

One final note of concern I would make relates particularly to biological weapons, Mr. Chairman, and the prospect of the use of these weapons in unstable areas or the prospect that such weapons could fall into the hands of terrorists.

To date we have no evidence that any known terrorist organization has the capability to employ these weapons nor that states supporting terrorism have supplied them. However, we are going to have to continue to work to prevent biological weapons proliferation and to prevent states from getting the sensitive materials and technology that could be used for biological weapons purposes.

I have to say that in the area of non-proliferation taken as a whole, this will be a particularly difficult task and, quite frankly, I also have to tell you, Mr. Chairman, we do not have the answers on how best to achieve this. That said, we do know that it will require a sustained again multilateral approach.

Turning to the legislation, the various legislation that has been proposed, Mr. Chairman, I do want to emphasize that we appreciate and welcome the interest and concern on the part of both Houses of Congress that is in fact reflected in that legislation.

In principle, as we have already stated, we believe that some form of sanctions, if appropriately formulated, could contribute to our efforts to control CBW non-proliferation and could give the President an additional tool to use in this regard. It is in fact in our interest for the President to have as broad a range of instruments and tools to use, including appropriate sanctions.

That said, in our view, in order to be most effective as a foreign policy instrument in this regard, we think that the application of such sanctions must be subject to Executive discretion and not be automatic or retroactive or involve unwarranted extensions of United States laws to other territories and sovereignties.

We think that taking an approach within that framework on sanctions is compatible with the ongoing efforts, the strategy that I have outlined to prevent non-proliferation and, Mr. Chairman, we hope very much to work with the Congress to draft legislation which will serve our common interests in this policy area.

Thank you.

[The prepared statement of Reginald Bartholomew follows:]

STATEMENT TO THE

SENATE COMMITTEE ON BANKING, HOUSING AND URBAN AFFAIRS

SUBCOMMITTEE ON INTERNATIONAL FINANCE AND MONETARY POLICY

ON

CHEMICAL AND BIOLOGICAL WEAPONS POLICY

BY

AMBASSADOR REGINALD BARTHOLOMEW

UNDER SECRETARY OF STATE

FOR

SECURITY ASSISTANCE, SCIENCE, AND TECHNOLOGY

U.S. DEPARTMENT OF STATE

JUNE 22, 1989

I am pleased to have the opportunity to appear before you today, to discuss with you the principal elements of our policy on chemical and biological weapons (CBW). These hearings come at a time of dynamic movement in the field of arms control. We have witnessed, and we have been the catalyst for significant events, which could affect world peace and the security of the United States for many years.

o CBW Sanctions Legislation

Let me first discuss the Administration's approach to a number of bills presently before the House and Senate which would impose sanctions on foreign countries which use CBW materials and technology. I want to emphasize that we welcome the interest and concern demonstrated by both houses of Congress on this issue. To the extent that we can coordinate our respective efforts, the greater will be our prospects for success in achieving President Bush's ultimate goal of a world without chemical weapons.

I should note that there already exists legislation, including the Export Administration Act, the Arms Export Control Act, and the International Emergency Economic Powers Act, which give the President many of the authorities proposed in the pending bills.

We nonetheless welcome the opportunity to work with Congress to strengthen our tools for combatting CW proliferation. In doing so, we agree that some form of sanctions, if appropriately formulated, would give the Administration an additional instrument against countries that use CW, and companies that aid proliferation. The key question is how sanctions would be implemented. Application of such sanctions must be subject to executive discretion, and there must be no automatic, retroactive, or extraterritorial application. Legislation should also encourage multilateral cooperation and action and avoid excessive emphasis on unilateral actions, both to maximize the deterrent effect of our efforts and to avoid discriminatory impacts on U.S. firms. We look forward to working with the Committee to develop legislation in this area.

o Status of the CW negotiations in Geneva

The U.S. has been negotiating at the Conference on Disarmament (CD) in Geneva on a comprehensive treaty to ban CW from the world's arsenals. The draft treaty tabled by then-Vice President Bush in 1984 remains the basis for negotiations. There are a number of key issues remaining to be resolved before we can conclude a comprehensive CW ban. These include, first and foremost, effective verification -- including provisions for monitoring the chemical industry -- and for security during the destruction phase and the protection of confidential business information and sensitive national security information and facilities. These are difficult issues and they will take time and concerted effort by all CD members to resolve.

The U.S. has repeatedly affirmed its commitment to the CD negotiations. President Bush during his address to Congress in February, stated his personal commitment to "banning chemicals from the face of the earth." He reaffirmed that commitment at the NATO Summit on May 29 when he said "the Alliance should support efforts to move ahead toward an effectively verifiable global chemical weapons ban. We must achieve a global chemical weapons ban as quickly as possible."

U.S. initiatives such as those that led to the Paris Conference on CW Use in January 1989 and the Australian Government/Industry Conference later this year, in September, demonstrate our commitment to the President's goal. In addition, while we are consulting closely with Allies on our approach to the entire range of arms control issues, we also continue a regular series of bilateral discussions with the Soviet Union on CW treaty issues and on the dangerous proliferation of CW capabilities to problem countries.

o U.S. Export Controls

In the interim until a comprehensive, effectively verifiable and truly global ban can be achieved, the U.S. has undertaken a number of unilateral measures to address the problem of CW proliferation. Proliferation of CW makes it more difficult to attain a global and effectively verifiable ban, and greatly increases the risk of use. Through the Department of State Office of Munitions Control, the International Traffic in Arms Regulations (ITAR) govern the export of munitions items, including chemical agents and related equipment. The U.S. currently exercises foreign policy export controls on 40 designated chemical weapons precursors, eleven of which require a validated export license for export to all destinations, except to members of the Australia Group, which I will describe more fully in a moment. The remainder require a validated export license for COCOM proscribed destinations and/or Iran, Iraq, Syria and Libya as well as Cuba, Vietnam, Cambodia, and North Korea. The licensing policy is to deny applications for Iran, Iraq, Syria and Libya, while applications for Cuba, Vietnam, Cambodia and North Korea are denied in conjunction with the general trade embargo for these countries. Exports to other destinations may be approved unless we believe they will be used for CW purposes.

The controls are effective in preventing direct U.S. exports of the designated chemicals to targeted countries. However, controls set by the U.S. and other members of the Australia Group have not prevented acquisition of chemicals by countries of concern. Suppliers and producers are becoming more adept at circumventing the controls, few countries practice reexport control over the chemicals, and chemicals may be purchased from countries that do not belong to the Australia group.

In addition, in order to coordinate our intragovernmental efforts to constrain CW proliferation, in February of this year we formed an interagency interdiction committee to ensure timely and appropriate action on information on the flow of CW materials and technology to problem countries. The group monitors intelligence, coordinates proposed demarches, and provides a centralized mechanism for obtaining clearance to downgrade or release intelligence information and ensure necessary follow-up. We expect that this committee will contribute to the effort to slow proliferation and make it more more difficult for countries of concern to maintain or acquire a CW capability.

o The Australia Group

In the multilateral arena, the "Australia Group," to which I referred earlier, is a particularly important element of our effort to curb CW proliferation. Under the chairmanship of Australia, the Group has been consulting informally since 1984 to improve the effectiveness of export controls on dual-use chemicals and to find ways to curb the illegal use and proliferation of chemical weapons.

CW use in the Iran-Iraq War spawned formation of the Australia Group in 1984. The U.S. supported Australian efforts to lead the Group of 19 industrialized nations, whose goal is to discourage and impede CW proliferation by harmonizing national export controls on CW precursor chemicals and by exchanging information on CW proliferation and seeking other ways to curb the use of CW.

The group meets informally twice a year in Paris. Group members are: EC-12, U.S., Australia, New Zealand, Japan, Canada, Norway and Switzerland. Austria will likely join in November. The Group has no charter or constitution and operates by consensus. Agreements are not binding under international law.

The Group has an informal "warning list" of 50 CW precursors. Most members share the list with their chemical industry and ask chemical firms to report and turn down transactions which might be associated with the chemical weapons programs of Iran, Iraq, Libya and Syria. The US itself controls 40 of these 50 CW precursors and is looking at bringing the other ten under control with regard to those four countries. A subset of the "warning list" is a group of nine "core list" chemicals for which Australia Group members have committed themselves to impose domestic export controls, to ensure peaceful and legitimate end use.

At the last meeting, in May 1989, the Group continued to make progress on adding new chemicals to the warning list and responded favorably to a U.S. proposal on information exchange. The next meeting is scheduled for mid-December 1989.

The Australia Group has enjoyed a measure of success. Its efforts have made it more difficult for would-be proliferators and others to obtain CW precursors. But it unfortunately remains true that countries intent on acquiring such chemicals can still do so.

o Australia Government/Industry Conference on Chemical Weapons

Another element of our approach to addressing CW proliferation has been to call attention to the problem on a global scale. At U.S. initiative, the Paris Conference on CW Use was held in January. As a further step, at the Vienna Meeting of Foreign Ministers on March 6, Secretary Baker called for an international conference of governments and the chemical industry, which Australia has agreed to host, September 18-22, 1989 in Canberra. We believe that this will be an excellent opportunity to involve industry and governments worldwide in the common effort to control the trade in chemical weapons precursors, as well as to gain industry support for the Geneva negotiations on a CW ban. We hope that the Conference will focus particularly on government and industry cooperative efforts to control the movement of precursors in international commerce.

o U.S. Diplomatic Efforts Against CW Proliferation

In addition, the U.S. is engaged in a major diplomatic effort specifically to prevent the acquisition by problem countries of a CW capability. We have publicly called on all governments to halt whatever assistance they, or their firms or citizens, might be providing to Libyan and other would-be proliferators. Privately and confidentially we have also raised specific concerns with several governments concerning reported involvement by firms in their country in these CW programs. Several governments have subsequently taken significant steps to help prevent further foreign assistance to problem countries. The U.S. will continue its vigorous diplomatic efforts to encourage others to take action which will help ensure that Libya and other would-be proliferators do not succeed in achieving full-scale CW production. For example, we have consulted closely with the Government of Japan, concerning the involvement of Japanese firms at a metal fabrication plant adjacent to the Libyan CW plant at Rabta. The Government of Japan informed us that as of July 1988, Japanese firms had ceased all involvement with the metal fabrication plant. In addition, the Japanese government has taken a number of measures on its own initiative to strengthen export controls on precursor chemicals.

We have also consulted closely with the Federal Republic of Germany, and are gratified by the legislation introduced in Bonn which would greatly tighten laws against the export of CW precursors and technology. We understand that legislation would make it a crime for a citizen of the Federal Republic to participate in the construction of CW facilities like the one at Rabta. In addition, the European Community -- at West German initiative -- has taken up the CW issue on an urgent basis, has called for EC-wide export controls on 8 chemicals, and is considering ways to coordinate export controls on other CW-related commodities, including equipment.

We believe that the full range of our nonproliferation efforts, through participation in the Australia Group, diplomatic overtures to allies and others, and consultations with the chemical industry, have helped to impede the spread of CW capabilities. While we cannot claim to have stopped the traffic in CW materials and technology, we have succeeded in enlightening responsible government and industry leaders to the problem and in enlisting their cooperation, and have made it that much more difficult for states to acquire or expand CW capabilities.

o Withdrawal of U.S. CW Stocks from the FRG

The President has also pledged to seek ways to accelerate the withdrawal of the unitary chemical weapons stocks from the Federal Republic of Germany. As the Committee is aware, there was an existing political commitment to withdraw those stocks by the end of 1992. This was in response to the concerns of our German ally.

Accordingly, the President determined -- after consultation with allies, and in particular with the German Government -- to announce our intention to explore ways and means of accelerating CW withdrawal. In announcing the President's decision in his speech at the Vienna Meeting of Foreign Ministers on March 6, Secretary Baker also challenged the Soviet Union to respond to our announcement by beginning the removal of their vast CW stockpile facing Western Europe.

In this respect, President Bush has led the way in the movement for greater progress in CW arms control and we are calling on the Soviets to match us with positive actions. The positive effect of our CW arms control efforts serves our foreign policy and national security interests in other areas of arms control policy as well. Progress in one area promotes progress across the board.

o Biological Weapons Proliferation

Unfortunately, today a number of countries are also estimated to be working to achieve a BW capability. The U.S. itself unconditionally renounced all aspects of offensive biological warfare in 1969. We then followed up this unilateral action by leading the fight for an international ban, the 1972 Biological and Toxin Weapons Convention (BWC). After the BWC was completed, many hoped that the security problem posed by biological and toxin weapons had been solved, although the absence of verification and enforcement provisions in the Convention were recognized as significant limitations on its effectiveness.

We are especially concerned about the spread of biological weapons in unstable areas and about the prospects of biological and toxin weapons falling into the hands of terrorists, or into the arsenals of those states which actively support terrorist organizations. To date, we have no evidence that any known terrorist organization has the capability to employ such weapons, nor that states supporting terrorism have supplied such weapons. However, we cannot dismiss these possibilities. If the proliferation of BW continues, it may be only a matter of time before terrorists do acquire and use these weapons.

We must continue to strive to prevent BW proliferation by reinforcing the moral, legal and political constraints against BW and, where feasible, seek to prevent states from obtaining sensitive materials for BW purposes. This will be a particularly difficult task and, quite frankly, we do not have the answers yet on how to achieve this. We do know that we cannot do it alone. Our efforts to constrain BW proliferation will also require a sustained multilateral approach, involving both U.S. leadership and cooperation with friends and allies.

T:AMB. BARTHOLOMEW: **SENATE BANKING COMMITTEE HEARINGS ON CBW, JUNE 22, 1989**

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EAP/RA:DWestmore
EB/EWT:PWisgerhof
ACDA/MA:SSMannix
ACDA/NWC:GSnidle
H:THauser
L:MSapiro
S/P:JHughes

Senator SARBANES. Thank you very much, Mr. Secretary.

We have been joined by Senator Wirth, and I will defer to Senator Wirth if he has a statement he might want to make.

Senator WIRTH. No. Thank you.

Senator SARBANES. I also have received statements for the record from both Senator Dole, which will be included with the other statements of the members of the committee, and from Senators Dixon and Roth, who had conflicting engagements.

We will now turn to Ms. McEntee and hear your testimony, and then we will question both of the witnesses.

STATEMENT OF SENATOR BOB DOLE

Senator DOLE. Mr. Chairman, Senator Gramm, Members of the Committee:

I appreciate the opportunity to urge favorable Subcommittee and Committee action on S. 8—The Chemical and Biological Weapons Control Act sponsored by myself, Senator Garn, Senator Heinz and others. I commend you, Mr. Chairman, and your Members from both sides of the aisle for having this hearing. It represents a significant step forward in our efforts to forge a strong, effective American policy in this vital area.

We face no greater short-term threat to America's security interests in the world than the seemingly relentless proliferation of chemical weapons-related technology and material around the globe.

Every day, step by step, Libya's lunatic leader, Colonel Qadaffi, comes closer and closer to producing chemical weapons, and perfecting the means to deliver them over long distances. If he gets there—and he might well get there, not in years but in months—we've got a whole new and deadly ball game in the Middle East.

And Qadaffi—while the most visible problem—is far from being the only one. Iraq not only has, but has used, chemical weapons, in its war with Iran. Iran and Syria are hell-bent on developing their own CW capability. And other Third-World nations are moving in the same direction.

The evil genie is already out of the bottle. There may still be time to get him back in there, but only if we act now.

President Bush has spoken out clearly many times on the importance he attaches to this issue. The Administration has forged the right overall policy. Our aim is to eliminate chemical weapons entirely. In fact, we've been reducing our own stockpiles of chemical weapons for years. The Soviets have now said they will start destroying theirs, too. I hope they are sincere and follow through. But let's make sure their proposals in this area are genuine, and not just a ploy designed to get us to halt production of the newer, safer binary chemical weapons that we have developed, to help offset the massive Soviet stockpiles and production lines.

We have to make sure the world—allies and adversaries alike—understand this bottom line: the United States is prepared to agree to the destruction of all of our chemical weapons, when the Soviets are ready to sign a binding, worldwide, verifiable agreement to ban all such weapons.

But, as I said, even as we try to negotiate this global ban, more and more nations seek to acquire chemical weapons. We're trying to stop them by pushing the adoption of an international agreement to control the export of the technology and equipment. We made some progress on that score recently at the Paris conference on chemical weapons. That must remain a top priority. But we also have to face facts: we're not going to have a good agreement for many months, perhaps years.

We can't just sit back and wait for that day. We have to act now, with every bit of leverage we have. If Qadaffi takes that last step and starts producing chemical weapons, we should make clear our determination to do whatever is necessary—whatever is necessary—to deny him the opportunity to use his deadly new toys.

And we also have to do one other thing. Right now, according to many reports, Japanese and West European firms—in a sickening pursuit of the almighty Dollar, or Yen, or Deutsche Mark—may still be helping Qadaffi and others of his ilk produce chemical weapons or develop the means to deliver them. No firm that knowingly engages in that kind of reckless activity deserves the right to profit from the American market.

That is one of the central themes of S. 8: if you deal with the likes of Qadaffi on chemical weapons, you can kiss goodbye to the American market. Specifically, the bill requires the President to investigate and report on any firms engaged in such activity, and then bans all such firms from selling their products in America, or contracting with our Government anywhere in the world, for many years.

Do we have the right to take such action? You bet we do. Our security interests, our allies and friends, the lives of American citizens—they're all at stake.

Do we need to take such action? You bet we do. Because if we don't, who will?

And, finally, do we need to act now? You bet we do. Because one of these tomorrows—and we don't know yet which one—it's going to be too late.

A second principal element of the bill is the establishment of a tighter domestic regime, to insure that American technology and material that might be used in a chemical weapons program cannot be exported—purposely or accidentally—from the United States.

I want to especially commend Senators Garn and Heinz, their fine staffs—especially John Walsh and Bill Reinsch—for taking the lead in crafting this section of the bill, and for their overall outstanding work on the bill.

Mr. Chairman, Members of the Committee:

As I have indicated, this is a non-partisan matter. it will require Republicans and Democrats, working together, to enact the kind of legislation we need.

This is also a matter on which the President and his Administration, and the Congress, must work together. Last year we introduced a similar piece of legislation; in response to in-put from the Reagan Administration on that bill, we have made some important amendments in this year's bill. We hope and trust, as a result, that the Administration will see S. 8 as something it can work with. And

I am very pleased with some informal indications I have had from high levels of the Administration that it wants to work with us to produce a good bill.

I think I can speak for all of our cosponsors to say that we, too, want to work cooperatively to take into account the legitimate concerns and views of the Administration. We think we've crafted a good bill; but we are wide open to ideas on how to make it even better.

Mr. Chairman, Members of the Committee:

In closing, let me again commend you for your decision to hold this hearing and move forward on consideration of S. 8. I and my staff are ready and willing to work with you, to get this important job done.

STATEMENT OF SENATOR ALAN DIXON

Senator Dixon. Mr. Chairman, at the outset, I want to congratulate you for calling this hearing. The proliferation of chemical and biological weapons has a major impact on the national security and foreign policy interests of the United States. I think that it is vital that we reinvigorate the Geneva protocols of 1925, the treaty banning chemical and biological warfare. It is also extremely important to take whatever additional steps we can that will effectively work to limit the spread of chemical and biological weapons.

The key word here is effective. What we cannot afford is a series of steps that sound good but which do not work. This subcommittee has jurisdiction over export controls, and we would be shirking our duty if we did not carefully review the potential contribution export controls might make to the vital policy objectives our nation is attempting to achieve.

The sad truth is, however, that the so-called "precursor" chemicals are widely available around the world. Unilateral U.S. export controls, therefore, cannot be successful in preventing chemical weapons proliferation. That is why the Commerce Department dropped national security export controls on certain chemicals and substituted foreign policy controls. We also need to keep in mind that there is a huge legitimate trade in chemicals and that the chemical industry is the largest export sector in the United States.

There are not effective multilateral controls governing international trade in chemicals. The "Australia Group", the only attempt at international cooperation in this area, is not even a treaty organization, and its informal consensus only extends to 11 chemicals. The members of the "Australia Group" are not even the sole suppliers of these 11 chemicals. There is substantial reason to believe that virtually any country with an oil refinery can produce them.

These problems should not deter us from acting. However, they must be confronted. Any action we take must meet a test of workability. We cannot afford empty gestures that will do nothing to halt the proliferation of chemical weapons. I am sure that this morning's hearing will provide us with valuable insight as we attempt to come to grips with this critical problem.

Thank you, Mr. Chairman.

STATEMENT OF WILLIAM V. ROTH, JR.

Senator ROTH. Mr. Chairman, I comment you for convening this hearing on the vexing question of chemical weaponry. I have noted, with some gratification, that here in Washington we are witnessing the emergence of a bipartisan consensus on the chemical weapons issue, a consensus which appears to favor the convening of a multilateral convention with the intention of negotiating a complete ban on chemical weaponry.

I should also note, in passing, that the executive and legislative positions on this question appear remarkably close, although the executive branch appears to harbor some understandable concerns vis a vis verification procedures.

However, we would be less than honest if we pretended that our commitment to confronting the chemical weapons question is universally shared. One country, Iraq, already has blatantly used chemical weapons in pursuit of military objectives. Others, such as the Soviet Union, Kampuchea and Vietnam have been accused of using such weapons and there exists a considerable body of evidence to buttress these accusations.

In addition, various private concerns in the West have, on occasion, supplied so-called "renegade states" with the tools and the technology necessary to manufacture chemical weapons, along with the ballistic missile technology which would enable them to launch chemical warheads over long distances. None of these heinous operations appears to have enjoyed the active support of the host government. On the other hand, a prevailing attitude in certain European countries that "business is business" has led some governments to be less than diligent in hunting down the participants in this ghastly trade.

Since almost all European countries pledge themselves to be dedicated both to halting the proliferation of chemical arsenals and of actually wiping them out, the United States is fully justified in questioning the sincerity of their public professions and commitment to fighting chemical proliferation.

The Senate Banking Committee must be particularly concerned with the question of U.S. options, both against foreign governments which use or proliferate chemical weapons and the private companies which faciliate their efforts. Personally, I must confess that I have seldom been a vociferous advocate of broad trade sanctions—they seldom achieve their objective and frequently damage U.S. exporters.

If trade is to used as a tool in combating chemical weapons proliferation, I would favor a more surgical approach, targeting the particular companies engaged in the trade and denying them as much access to the U.S. marketplace as possible.

I am aware that the administration in general, and the Commerce Department in particular, is not enamored of this idea. Its implementation would anger foreign governments and raise accusations that the United States was exercising extra-territorial jurisdiction. I have every sympathy with these reservations.

I, too, want the United States to be a reliable trading partner which can reach out to foreign markets. On the other hand, I must ask, what do we intend to do when diplomatic demarches (day-marsh) fail?—do we simply throw up our hands in despair and do nothing while weapons of mass destruction pass into the hands of madmen?

I look forward to hearing the answers to this and other questions from today's witnesses.

Thank you, Mr. Chairman.

STATEMENT OF JOAN McENTEE, DEPUTY UNDER SECRETARY OF COMMERCE FOR EXPORT ADMINISTRATION, ACCOMPANIED BY JAMES LeMUNYON, DEPUTY ASSISTANT SECRETARY FOR EXPORT ADMINISTRATION

Ms. McEntee. Good morning, Mr. Chairman, and Members of the Committee.

I would like to summarize my remarks and ask that my longer statement be submitted for the record.

I am pleased to be here this morning to testify on behalf of the Department of Commerce on export controls related to chemical and biological materials.

The Commerce Department's Bureau of Export Administration is responsible for controlling the exports of chemical and biological commodities with primarily commercial end uses. Our authority to control these commodities is provided in section VI of the Export Administration Act. Section VI also authorizes us to control items that may have military or weapons related application. In other words, the dual-use items.

Current export controls apply to 40 of an estimated 20,000 commercially trade chemicals and chemical products. As Senator Bond pointed out, these chemicals are very common and can be used in such products as paint thinner, emulsifiers and fertilizer production.

However to produce chemical agents, they must under go a chemical reaction with other chemicals. Also due to widespread foreign availability for these chemicals, it is critical that export controls also be applied by other countries that have indigenous sources of the same products. Otherwise, U.S. exporters are placed at a competitive disadvantage without achieving U.S. foreign policy objectives.

As the Chairman mentioned, and also Mr. Bartholomew, a group of Western countries, including Japan, have agreed to control these chemicals through an informal organization known as the Australia Group.

In addition to the 40 chemicals already listed, the Australia Group has identified 10 more chemicals useful in the production of chemical weapons and we are in the process of including them on the group's list under our foreign policy controls.

In addition to chemicals, the United States controls several biological agents, including all genetically altered biological materials. Our controls are based on toxicity and a validated license is required for export of these goods to all destinations, except Canada. These items are not yet controlled by other countries.

It is difficult to control biological materials. A vial can be slipped into a coat pocket and transported across country lines. Therefore, it is critical that our enforcement system be the meat on the bones of the licensing process. Violators are subject to a fine of up to five times the value of the export, or $1 million, whichever is greater. Violators can also serve up to 10 years in prison. In addition to our criminal penalties, our authority to deny export privileges is also an effective deterrent.

Furthermore, we are engaged in a public awareness program to educate the public, exporters and the chemical and biological industries on just what controls are in place and how to recognize and report suspicious orders for these products. We also conduct pre-license and post-shipping checks to prevent exports to unreliable or questionable end users.

This is particularly important since the chemical industry is the United States largest international trading industry. Mr. Chairman, a small number of chemical and biological agents can, under the right circumstances, produce lethal effects. The Commerce Department takes its role of controlling the export of these products very seriously. Yet, at the same time, we administer these controls in a manner that minimizes the disruption of legitimate commercial trade.

Mr. Chairman, to summarize, in coordination with our allies, we believe that our foreign policy controls on these agents meet the United States' objective of stemming the flow of chemical precursors and biological agents to countries that would use these materials for purposes other than peaceful purposes.

I or my colleague, James LeMunyon, the Deputy Assistant Secretary for Export Administration, would be pleased to answer any questions you or the Committee might have.

Thank you, Mr. Chairman.

[The prepared statement of Joan McEntee follows:]

STATEMENT BY JOAN MCENTEE
DEPUTY UNDER SECRETARY OF COMMERCE
FOR EXPORT ADMINISTRATION
ON CHEMICAL AND BIOLOGICAL AGENTS EXPORT CONTROLS
BEFORE THE SENATE COMMITTEE ON BANKING, HOUSING & URBAN AFFAIRS
SUBCOMMITTEE ON INTERNATIONAL FINANCE & MONETARY POLICY

JUNE 22, 1989

GOOD MORNING MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE. THANK YOU FOR THE OPPORTUNITY TO TESTIFY ON EXPORT CONTROLS RELATED TO CHEMICAL AGENT PRECURSORS AND CERTAIN BIOLOGICAL AGENTS. THE COMMERCE DEPARTMENT'S BUREAU OF EXPORT ADMINISTRATION (BXA) IS THE AGENCY RESPONSIBLE FOR CONTROLLING EXPORTS OF CHEMICAL AND BIOLOGICAL COMMODITIES WITH PRIMARILY COMMERCIAL END-USES. WE COMMONLY REFER TO COMMERCIAL ITEMS THAT MAY ALSO HAVE USES INVOLVING WEAPONS AS "DUAL USE" ITEMS.

THE AUTHORITY OF THE COMMERCE DEPARTMENT TO CONTROL THE EXPORT OF CHEMICAL PRECURSORS AND BIOLOGICAL AGENTS IS PROVIDED IN SECTION 6 OF THE EXPORT ADMINISTRATION ACT (EAA). AS YOU KNOW, THE EAA SPECIFIES THAT CERTAIN ITEMS MAY BE EXPORTED ONLY AFTER AN APPLICATION IS RECEIVED, EXAMINED AND APPROVED BY BXA.

WE EXECUTE THIS LAW WITH GREAT CARE, MINDFUL OF THE POSSIBLE CONSEQUENCES IF CERTAIN CHEMICAL AGENT PRECURSORS AND BIOLOGICAL AGENTS GET IN THE WRONG HANDS, AS WELL AS THE CONSEQUENCES FOR

U.S. INDUSTRY IF OUR CONTROLS ARE UNNECESSARILY BURDENSOME.

I WOULD LIKE TO BEGIN BY CLARIFYING A FEW POINTS ABOUT CHEMICAL AGENT PRECURSORS AND BIOLOGICAL AGENTS AND GIVE YOU AN IDEA OF OUR EXPORT CONTROL PROGRAM.

BACKGROUND:

THE CHEMICALS THAT HAVE BEEN IDENTIFIED TO DATE AS POSSIBLE PRECURSORS TO CHEMICAL AGENTS, AS WELL AS BIOLOGICAL AGENTS WITH USES IN BIOLOGICAL WEAPONS DEVELOPMENT, ARE CONTROLLED FOR THE PURPOSE OF ACHIEVING OUR U.S. FOREIGN POLICY OBJECTIVES. THE CHEMICALS WE CONTROL ARE DUAL-USE IN NATURE, MEANING THEY HAVE BOTH COMMERCIAL AND MILITARY USES. THEY ARE VERY COMMON AND CAN BE USED IN SUCH PRODUCTS AS PAINT THINNER, EMULSIFIERS AND FERTILIZER PRODUCTION. THEY MUST UNDERGO A CHEMICAL REACTION WITH OTHER CHEMICALS TO PRODUCE CHEMICAL AGENTS. THERE ARE COUNTLESS LEGITIMATE COMMERCIAL APPLICATIONS FOR THESE CHEMICALS AS WELL AS WIDESPREAD FOREIGN AVAILABILITY. HENCE, IT IS CRITICAL THAT EXPORT CONTROLS ALSO BE APPLIED BY OTHER NATIONS THAT HAVE INDIGENOUS SOURCES OF THE SAME PRODUCTS. OTHERWISE, U.S. EXPORTERS ARE PLACED AT A COMPETITIVE DISADVANTAGE WITHOUT

ACHIEVING U.S. FOREIGN POLICY OBJECTIVES.

IN FACT, THE CHEMICAL INDUSTRY IS THE UNITED STATES' LARGEST INTERNATIONAL TRADING INDUSTRY. TOTAL SHIPMENTS BY THIS INDUSTRY REACHED $238 BILLION IN 1988 -- A $12.7 BILLION POSITIVE TRADE BALANCE. THE INDUSTRY EMPLOYS 1.1 MILLION AMERICANS. CURRENT EXPORT CONTROLS APPLY TO ONLY 40 OF AN ESTIMATED 20,000 COMMERCIALLY TRADED CHEMICALS AND CHEMICAL PRODUCTS. IN 1988, WE RECEIVED APPROXIMATELY 1200 INDIVIDUAL VALIDATED LICENSE APPLICATIONS, COVERING AN ESTIMATED $68 MILLION IN EXPORTS, OF ALL THE CHEMICALS THEN SUBJECT TO CONTROLS. WE ANTICIPATE RECEIVING ABOUT 200 APPLICATIONS A YEAR FOR THE 40 PRECURSOR CHEMICALS THAT REMAIN UNDER CONTROL.

IN COMPARISON TO CHEMICAL EXPORTS THE TRADE IN BIOLOGICAL PRODUCTS IS CONSIDERABLY SMALLER. IN 1988, WE RECEIVED APPROXIMATELY 600 APPLICATIONS FOR INDIVIDUAL VALIDATED LICENSES REPRESENTING $600,000 IN EXPORTS. UNLIKE CHEMICAL AGENT PRECURSORS WHICH ARE SHIPPED IN BULK QUANTITY FOR INDUSTRIAL USES, BIOLOGICAL PRODUCTS ARE SHIPPED IN SMALL QUANTITIES AND OFTEN FOR RESEARCH PURPOSES. IN ADDITION, SOME OF THE MOST LETHAL BIOLOGICAL AGENTS CAN BE CULTURED FROM READILY AVAILABLE

LAB SPECIMENS. THE BIOLOGICAL INDUSTRY IS DOMINATED BY RESEARCH ORIENTED FIRMS, FREQUENTLY WITH STRONG TIES TO MAJOR UNIVERSITIES. MOST U.S. MANUFACTURERS OF BIOLOGICAL PRODUCTS ARE SMALL AND INDEPENDENT, AS ARE PRODUCERS IN OTHER COUNTRIES.

LICENSING:

I WOULD NOW LIKE TO TOUCH ON THE SCOPE AND OPERATION OF COMMERCE'S EXPORT LICENSING OPERATION, GIVE YOU AN UPDATE ON OUR OWN ENFORCEMENT EFFORTS, AND OUTLINE THE STEPS WE ARE TAKING WITH OTHER U.S. AGENCIES TO HELP PREVENT PROLIFERATION OF CHEMICAL AND BIOLOGICAL WEAPONS.

OF THE 40 CHEMICAL AGENT PRECURSORS ON THE CONTROL LIST, ALL REQUIRE A VALIDATED LICENSE FOR EXPORT TO CUBA, VIETNAM, CAMBODIA, NORTH KOREA, IRAN, IRAQ, SYRIA AND LIBYA. EXPORTS TO THESE DESTINATIONS ARE AUTOMATICALLY DENIED.

ELEVEN OF THE 40 ARE ALSO CONTROLLED TO MOST OTHER DESTINATIONS. LICENSE APPLICATIONS FOR EXPORTS TO OTHER DESTINATIONS ARE REVIEWED ON THE BASIS OF END-USE AND END-USER. EXPORTS FOR COMMERCIAL USERS ARE GENERALLY APPROVED UNLESS THERE IS A REASON TO BELIEVE THAT THE EXPORT IS INTENDED FOR CHEMICAL OR BIOLOGICAL WEAPONS.

OTHER COUNTRIES HAVE AGREED TO CONTROL THESE SAME CHEMICALS

THROUGH AN INFORMAL ORGANIZATION KNOWN AS THE AUSTRALIA GROUP. THIS GROUP INCLUDES THE MAJOR INDUSTRIALIZED MANUFACTURERS OF THE CHEMICALS OF CONCERN IN THIS AREA. THE AUSTRALIA GROUP IS AN INFORMAL BODY THAT OPERATES ON THE BASIS OF CONSENSUS WITH THE OBJECTIVE OF PREVENTING THE ILLEGAL USE AND PROLIFERATION OF CHEMICAL WEAPONS.

IN MEETING THIS OBJECTIVE, THE GROUP IDENTIFIES CHEMICALS CONSIDERED TO BE WEAPONS PRECURSORS AND RECOMMENDS THAT ALL PARTICIPANTS SIMILARLY CONTROL THE EXPORT OF THESE CHEMICALS. THE GROUP HAS NOT, AT THIS TIME, ADDRESSED BIOLOGICAL WEAPONS.

IN ADDITION TO THE 40 CHEMICALS ALREADY LISTED, THE AUSTRALIA GROUP RECENTLY HAS IDENTIFIED TEN MORE CHEMICALS AS BEING PARTICULARLY USEFUL IN THE PRODUCTION OF CHEMICAL WEAPONS AND WE ARE EXAMINING THE INCLUSION OF THESE UNDER OUR FOREIGN POLICY CONTROLS. WE INTEND TO TRACK THE AUSTRALIA GROUP'S CONTROL LEVELS IN OUR OWN PROGRAM, CONTROLLING THE 9 CORE LIST CHEMICALS TO ALL DESTINATIONS EXCEPT THE AUSTRALIA GROUP, AND CONTROLLING THE OTHER 41 TO IRAN, IRAQ, SYRIA AND LIBYA.

U.S. FOREIGN POLICY CONTROLS ON BIOLOGICAL AGENTS CURRENTLY APPLY TO SEVERAL CLASSES OF BIOLOGICAL MATERIALS BASED ON TOXICITY INCLUDING ALL GENETICALLY ALTERED BIOLOGICAL MATERIAL. A VALIDATED LICENSE IS REQUIRED FOR THESE GOODS TO ALL DESTINATIONS

EXCEPT CANADA. WE ARE WORKING WITH EXPERTS IN THIS FIELD THROUGH OUR INDUSTRY TECHNICAL ADVISORS TO ENSURE THAT THE APPROPRIATE AGENTS ARE IDENTIFIED AND CONTROLLED AND THAT INEFFECTIVE CONTROLS ARE ELIMINATED.

WHEN THE DEPARTMENT OF COMMERCE RECEIVES AN APPLICATION TO EXPORT CONTROLLED CHEMICAL AGENTS OR BIOLOGICAL MATERIAL TO A DESTINATION WHERE THERE IS NOT AN AUTOMATIC DENIAL POLICY, WE REFER THE CASE TO THE STATE DEPARTMENT. MEANWHILE, OUR ENFORCEMENT DIVISION CHECKS THE LISTED END-USER AGAINST OUR CLASSIFIED LIST OF UNRELIABLE OF UNRELIABLE OR QUESTIONABLE END-USERS AND EXAMINES ANY RELATED INFORMATION FROM INTELLIGENCE AND BUSINESS SOURCES.

ENFORCEMENT:

THE REAL "TEETH" OF OUR CONTROL SYSTEM IS IN OUR ENFORCEMENT PROGRAM. AS THE PRIMARY GOVERNMENT AGENCY RESPONSIBLE FOR ADMINISTRATION OF THE EAA, COMMERCE'S ENFORCEMENT ARM HAS A STRONG PREVENTION PROGRAM, AS WELL AS INVESTIGATION AND PROSECUTION ACTIVITIES. WE BELIEVE OUR FIRST RESPONSIBILITY IS TO PREVENT ILLEGAL SALES AND DIVERSIONS FROM OCCURRING. HENCE, THE ENFORCEMENT OFFICE'S ROLE IS TO REVIEW AND SUPPLY INFORMATION ON LICENSE APPLICATIONS. IT IS A VITAL ROLE. THEIR EXTENSIVE USE OF DATA GATHERED FROM THE INTELLIGENCE COMMUNITY AND BUSINESS SOURCES IS PARTICULARLY IMPORTANT BECAUSE EXPERIENCE HAS SHOWN

THAT WE CANNOT RELY SOLELY ON RANDOM, VISUAL INSPECTION AT PORTS.

IN PARTICULAR, BIOLOGICAL MATERIAL COULD BE SLIPPED OUT OF THE COUNTRY BY SIMPLY PLACING A SMALL VIAL INTO ONE'S COAT POCKET AND GETTING ON AN INTERNATIONAL FLIGHT. IN ADDITION, BOTH CONTROLLED CHEMICALS AND BIOLOGICAL AGENTS OFTEN CANNOT BE IDENTIFIED BY VISUAL INSPECTION. THEY OFTEN REQUIRE TIME-CONSUMING LABORATORY ANALYSIS.

SINCE RANDOM PORT ENFORCEMENT EXERCISES FOR THESE ITEMS HAS LIMITATIONS, PUBLIC KNOWLEDGE OF U.S. EXPORT CONTROLS IS ESSENTIAL TO THE SUCCESS OF OUR EXPORT CONTROL PROGRAM. OUR OFFICE OF EXPORT ENFORCEMENT HAS AN ACTIVE OUTREACH PROGRAM IN THIS AREA TO EDUCATE THE CHEMICAL AND BIOLOGICAL INDUSTRIES ON EXACTLY WHAT CONTROLS ARE IN PLACE, AND ADVISING THEM ON HOW TO RECOGNIZE SUSPICIOUS ORDERS FOR THESE PRODUCTS.

WE HAVE RECEIVED VERY FAVORABLE RESPONSES FROM INDUSTRY ON THIS PROGRAM AND PLAN TO EXPAND OUR EFFORTS IN OUTREACH. AS ALREADY NOTED, COMMERCE EXPORT ENFORCEMENT ALSO CHECKS THE RELIABILITY OF THE END-USERS IN THE LICENSING STAGE AND MONITORS INPUT FROM THE INTELLIGENCE COMMUNITY THAT MIGHT INDICATE PROBLEM DESTINATIONS.

THE COMBINATION OF OUR LICENSING AND ENFORCEMENT PROGRAMS PROVIDES A COMPREHENSIVE APPROACH TO CONTROLLING THE INITIAL

EXPORT OF CHEMICAL AGENTS AND BIOLOGICAL MATERIAL.

CONCLUSION:

MR. CHAIRMAN, THE MANUFACTURE OF CHEMICAL AND BIOLOGICAL PRODUCTS CONTINUES TO PROVIDE OUR NATION AND PEOPLE AROUND THE GLOBE WITH GOODS THAT ENHANCE OUR QUALITY OF LIFE AND ECONOMIC PRODUCTIVITY.

HOWEVER, A SMALL NUMBER OF CHEMICALS AND BIOLOGICAL AGENTS CAN, GIVEN THE PROPER CIRCUMSTANCES AND COMBINATIONS, PRODUCE LETHAL EFFECTS. THE COMMERCE DEPARTMENT HAS THE RESPONSIBILITY OF CONTROLLING THE EXPORT OF SUCH PRODUCTS SO THEY ARE USED ONLY FOR PEACEFUL PURPOSES -- AND ADMINISTERING THESE CONTROLS IN A MANNER THAT MINIMIZES THE DISRUPTION OF LEGITIMATE COMMERCIAL TRANSACTIONS.

SINCE MANY BIOLOGICAL AGENTS, CHEMICALS, AND RELATED MANUFACTURING EQUIPMENT ARE COMMONLY AVAILABLE FROM SOURCES OUTSIDE THE U.S., OUR CONTROLS ARE ONLY EFFECTIVE IF WE RECEIVE THE COOPERATION OF OTHER NATIONS THAT SOURCE THESE PRODUCTS.

THIS CONCLUDES MY PREPARED REMARKS. I WOULD BE PLEASED TO ANSWER YOUR QUESTIONS.

[Senators conferring.]

Senator **Heinz**. Excuse us. It was I who claimed the Chairman's attention on a matter.

Thank you.

Senator **Sarbanes**. I think if, for the record, you could identify your colleague that is with you, that would be helpful.

Ms. **McEntee**. I am accompanied by James LeMunyon who is the Deputy Assistant Secretary for Export Administration.

Senator **Sarbanes**. I think we'll do a 5-minute round so that the Members who are here all have an early chance, and then we'll go to a second round if I assume it will be necessary.

Mr. Secretary, let me ask you, what sanctions does the Administration support?

Mr. **Bartholomew**. To give you a definitive answer, Mr. Chairman, I would have to come back to you. We regard this as something in part to be worked out in the process of trying to work together with you on legislation, but obviously some of the sanctions that could be undertaken could be drawn from some of the lists that have been presented.

We have imposed, for example, export sanctions in times past under various forms of legislation. We have imposed various sanctions where aid and other dimensions are concerned. The question is what would be best and what would be most applicable in this case, and I'm not prepared to give you a settled Administration answer on that question at this point.

Senator **Sarbanes**. Well, could you give us just some idea what sort of sanctions you think might be helpful? You indicated, and in fact I think you stated in your statement that you agree that some form of sanctions would give the Administration an additional instrument against countries that use CW and companies that aid proliferation. Then you say the key question is how sanctions would be implemented.

So two questions, what are the sanctions that you are prepared to consider or think advisable, and then how are they applied or how are they implemented?

Mr. **Bartholomew**. Well, on the first question, I think that we are prepared to look at some of those that are listed such as the import sanctions, the procurement sanctions and the like. I don't want to do it at this point, Senator, because I'm just simply not in a position to do so or to say to you that this is the Administration's view of a preferred list of sanctions independent of the question of how they would be implemented. That's something that we would like to consider further with you as we work on this legislation.

Senator **Sarbanes**. Well, what do you think the time frame for all of this should be? I mean how much of an urgent problem is it? Maybe it's not such an urgent problem; is that right?

Mr. **Bartholomew**. You mean the question of sanctions or legislation?

Senator **Sarbanes**. Well, is the Administration's preferred position that there be no legislation?

Mr. **Bartholomew**. Senator, I think that we are prepared to see legislation in this area.

Senator **Sarbanes**. What is your preferred position?

Mr. BARTHOLOMEW. I think that basically whatever needs to be done with the system could be fixed without legislation, to be quite frank, Senator. That said, we do think that legislation could be useful in terms of focusing international attention on the problem with us, and indeed providing us certain authorities on certain sanctions such as I am saying. And in that sense——

Senator SARBANES. Mr. Secretary, I'm getting more and more upset, and it's not even taking my 5 minutes, and I didn't start out that way this morning. But I must tell you that I'm getting there in a hurry.

Senator HEINZ. Mr. Chairman, I've never seen you upset. [Laughter.]

Senator SARBANES. If everything that could be done to fix the system could have been done without legislation, why haven't you done it?

Mr. BARTHOLOMEW. Senator, we think legislation can be useful and are ready to work with you on having legislation that can be useful for us.

Senator SARBANES. What do you think could have been done to fix the system that would have made legislation unnecessary that has not been done?

Mr. BARTHOLOMEW. There are some things that we couldn't have done without it. If I understand correctly, we could not have authority for certain sanctions such as are being talked about in the legislation without it, and in that sense, that's an authority that would be useful for us to have.

Senator SARBANES. Does the Commerce Department think there should be sanctions, or additional authority for sanctions?

Ms. MCENTEE. Mr. Chairman, we would prefer that there not be additional sanctions. However, if sanctions are to be included, they should not include retroactive sanctions, not include mandatory sanctions, but provide discretionary authority for the President.

Senator SARBANES. Is it your view that everything is being done that needs to be done to bring this situation under control?

Ms. MCENTEE. Mr. Chairman, regarding the U.S. licensing procedures under section 6 of the Export Administration Act, we are very confident that those are the correct and appropriate procedures.

I suppose where we see less than perfection, if you will, is on the multilateral side, the effectiveness of the control by other countries.

Senator SARBANES. Well, my time is about to expire. Let me just simply quote from Senator Dole's statement just to bring it very much home to you.

> We face no greater short-term threat to America's security interests in the world than the seemingly relentless proliferation of chemical weapons related technology and material around the globe.

And then later after he talks about the international efforts, you know, the Paris Conference and so forth, he says:

> We also have to face facts. We are not going to have a good agreement for many months and perhaps years. We can just sit back and wait for that day. We have to act now with every bit of leverage we have.

And then he goes on of course to talk about the need for additional sanctions and their application.

I see my time is up and I'll yield to Senator Heinz.

Senator **Heinz**. Mr. Chairman, thank you.

There are three kinds of issues here, it seems to me. One is just understanding where we are. The second is where we might go from here that would be accepted or at least borne by the Administration. And I can't help but reflect that we would never have gotten any resolution of the problems that were created with Toshiba and the sale of very sophisticated machine tools to the Soviet Union if Congress hadn't taken very strong action indeed.

We had the situation where we had people from the Department of Defense defending Toshiba and saying well, they really didn't do anything bad and it didn't cost anything, all of which was a bunch of, politely stated, malarkey.

Senator **Sarbanes**. That's very polite, I might add.

Senator **Heinz**. Well, you've never seen me upset either. [Laughter.]

And, finally, I have some questions about how we might breathe additional vitality into the Australia Group.

First, let me ask, Ms. McEntee, what sanctions do you now have? You say you don't want any more. Which ones do you have currently? What can you do against somebody who is misbehaving?

Ms. **McEntee**. Well, we have the enforcement sanctions that I mentioned.

Senator **Heinz**. Well, what are they?

Ms. **McEntee**. There is imprisonment of up to 10 years.

Senator **Heinz**. What's that again?

Ms. **McEntee**. Imprisonment of up to 10 years. We may also impose a fine of up to $1 million.

Senator **Heinz**. That's against somebody——

Ms. **McEntee**. A violator.

Senator **Heinz** [continuing]. Who is dumb enough to stick around this country. But what if it's Noriega or somebody outside this country, we can't touch them, right?

Ms. **McEntee**. That's correct. These are for U.S. violators.

Senator **Heinz**. So what you're saying is we've got some criminal sanctions——

Ms. **McEntee**. That's right.

Senator **Heinz** [continuing]. Which involve jury trials and all the rest, right?

Ms. **McEntee**. Yes.

Senator **Heinz**. The Executive Branch has no sanctions that they can impose?

Ms. **McEntee**. We have administrative sanctions where we can deny export privileges.

Mr. **LeMunyon**. But only for U.S. exporters or people who export goods and technology under the jurisdiction of the United States.

Senator **Heinz**. And when it comes to a country that is doing business in this country but isn't a U.S. company, what sanctions can we apply?

Ms. **McEntee**. These apply to U.S. domiciled violators and foreign persons who violate U.S. re-export controls.

Senator HEINZ. So you have the situation where if a company is domiciled abroad, even though they are doing business here, you can't touch them, but if they are domiciled in the United States, even though they might do most of their business abroad, they might have subsidiaries throughout the rest of the world and the United States might just be a very small part of the action, you could do something about them.

Ms. McENTEE. That's right.

Senator HEINZ. Why is that equal?

Ms. McENTEE. It is not equal, Senator, we cannot impose sanctions against foreign persons who sell non-U.S. goods and technology.

Senator HEINZ. We agree. That's why there are a variety of bills that we are having hearings on today that impose additional sanctions.

Now let's look at your problems with them. The basic sanction that is in the Dole-Heinz bill is to say that we will deny export privileges into the United States as well as various kinds of nonparticipation in bidding in federal contracts for a company which is responsible for violating the law.

Now what's wrong with that?

Mr. LEMUNYON. Let me share an example, Senator.

Senator HEINZ. We apply it to U.S. companies, and this simply really gives us a stick over non-U.S. companies. Now what's wrong with that?

Mr. LEMUNYON. Well, the question is a matter of discretion and I think it gets into your interest——

Senator HEINZ. Well, that's another issue. Discretion is another issue. This is the specific sanction and, by the way, it's already in the law with respect to national security, Section 5, right?

Mr. LEMUNYON. That's correct. Let me share an example. I had a meeting with——

Senator HEINZ. Before you share an example, how about a position. I mean are you for it or against it, or are you taking the Fifth Amendment?

Mr. LEMUNYON. No. It depends on how it's crafted, as I think Under Secretary Bartholomew——

Senator HEINZ. Again, remember Senator Sarbanes at the beginning made a very useful distinction between the sanctions and the method of implementation. We are talking about the sanctions I hope.

Mr. Bartholomew, on this specific question.

Mr. BARTHOLOMEW. Yes, I understand that. Our concern with sanctions in this regard, particularly sanctions that would have any automaticity to them, Senator, is rooted essentially in the view that it wouldn't help us get to the kind of multilateral cooperation we think we need from other governments.

Senator HEINZ. To say that it is a questionable statement is to put it kindly. The record is that when we have taken strong action, we have gotten results. When we have done nothing, nothing has happened, and Toshiba is one example.

And I've got to tell you that, in my judgment, it took, you know, the legislative equivalent of half a dozen atomic bombs to wake the

German Government up on the Imhausen sale. The first time they looked at it, what did they say? It couldn't have happened here.

There are two examples. Have you got any examples that say that keeping this stuff quiet and doing nothing succeeds?

Mr. BARTHOLOMEW. Senator, you may be right in those specific cases, but if we here in the United States pass a law which automatically without discretion mandates sanctions where the operations of foreign companies are concerned, we are concerned that the reaction of foreign governments will be that it is their business to police their companies, it is their cooperation that we want and, it is them that we want to police their companies. We cannot police foreign companies the way the governments can. We cannot supplant for that role.

The concern here is that it diverts the focus from the cooperation of governments and, because of their own sense that we are imposing our own laws on their companies, it may undercut some of the cooperation we want from them. That's our concern.

Senator HEINZ. As I understand what you have just said, and my time has expired, your concern is automaticity. I do not hear—and I'm saying this because I don't want to misread what you said—but it seems to me what you're saying is that if we want to confer the authority to take action against foreign companies that do business here, that's all right, but we don't want automaticity. Do I understand your position correctly?

Mr. BARTHOLOMEW. Yes, and in that regard I would like for Senator Sarbanes——

Senator HEINZ. Well, you've answered my question, and my time has expired, but there will be some more time I think shortly.

Thank you, Mr. Chairman.

Senator SARBANES. Go ahead if you want to develop your answer.

Mr. BARTHOLOMEW. I would like to say coming back to the question of our attitude, the Administration's position on legislation in this area, Senator, and let me say this as precisely as I can. First, it is clear that we do not oppose new legislation in this area.

Senator SARBANES. Who are you speaking for now?

Mr. BARTHOLOMEW. I think I'm speaking for the Administration.

Senator SARBANES. Well, now Ms. McEntee said that the Commerce Department's position is that they don't want legislation.

Mr. BARTHOLOMEW. I believe that I am speaking for the Administration when I say, Senator, that the Administration does not oppose legislation in this area.

Senator SARBANES. Does the Administration support legislation in this area?

Mr. BARTHOLOMEW. The Administration would support legislation in this area properly formulated to take account of some of the concerns that I expressed in my opening remarks and that are expressed in my opening statement, such as retroactivity, automaticity and Presidential discretion on when and how.

Senator SARBANES. Now assuming you are satisfied on all those points, what sanctions are you in favor of?

Mr. BARTHOLOMEW. That's a question I can't answer formally in the name of the Administration, but it is one that I will be prepared to come back to.

Senator HEINZ. Good luck, Mr. Chairman.

Senator Sarbanes. Senator Wirth.

Senator Wirth. Secretary Bartholomew, how long have you had this responsibility?

Mr. Bartholomew. I'm sorry, Senator?

Senator Wirth. How long have you had this responsibility at the State Department?

Mr. Bartholomew. I was confirmed on the 20th of April, Senator.

Senator Wirth. And what were you doing before that?

Mr. Bartholomew. I was the Ambassador to Spain.

Senator Wirth. When were you given the portfolio to begin thinking about chemical and biological weaponry?

Mr. Bartholomew. At the beginning of the Administration.

Senator Wirth. When was that?

Mr. Bartholomew. Sometime in January.

Senator Wirth. So you've been at this for 6 months?

Mr. Bartholomew. Well, I've been at this for 6 months in one sense——

Senator Wirth. Can you tell me what kind of a working group is there at the State Department that focuses on these issues? Who do you work with? Are you just by yourself or do you have a secretary or do you have somebody else you work with?

Mr. Bartholomew. Senator, there are a set of Bureaus within the State Department.

Senator Wirth. Who do you work with on this?

Mr. Bartholomew. I work with the Bureau of Political Military Affairs and I work with all of the regional Bureaus.

Senator Wirth. Have they developed a position paper on these issues in the State Department?

Mr. Bartholomew. Yes, but we have not developed a position paper on the specific question of what specific sanctions apart from the question——

Senator Wirth. Tell me what have you been doing for the last 6 months?

Mr. Bartholomew. What we have been doing——

Senator Wirth. That may be a difficult question, but I think we are just a little bit frustrated in trying to figure out what has been going on. What have you done on this issue in the last 6 months?

Mr. Bartholomew. One, we have formulated the idea of the Australian conference that the Secretary enunciated in March.

Senator Wirth. I think the Australian initiative happened in 1984.

Mr. Bartholomew. No, this is in terms of the government industry. You're talking about the Australia Group, Senator. This is the government industry conference which is to take place in September.

Senator Wirth. So in 6 months you decided you're going to have a conference between government and industry. What else have you done?

Mr. Bartholomew. There is more involved in it than that, sir. There is the matter of the preparation of it and working with the other governments that are involved in terms of forming it and in terms of having it come out right and contribute to what you're trying to get done.

And, second, we have been working bilaterally with other governments in terms of the Rabta case quite vigorously in the last 6 months, and I think some of the fruits of that have been seen. That is an ongoing action that involves multiple contacts with multiple governments. It involves contacts on the specifics of the Rabta case, the Libyan case, but it also contacts with governments about the state of their export controls.

Senator **Wirth**. You've had some bilateral contacts. What else have you been doing?

Mr. **Bartholomew**. Bilateral contacts is too brief a description of them, Senator, but I'll accept that.

Senator **Wirth**. Just give me a brief summary. I'm just trying to get some specifics out of you, Mr. Bartholomew, and I'm doing the best I can.

Mr. **Bartholomew**. We have in fact succeeded in conversations with the Germans and the Japanese to get significant steps taken within the last 6 months where those countries are concerned, particularly the Germans, to tighten up and institute a better export control system.

Senator **Wirth**. So you've been having a variety of sessions down there. What kind of meetings have you had with the Commerce Department? Have you and Ms. McEntee met on this issue?

Mr. **Bartholomew**. No, we have not.

Senator **Wirth**. Have you met with people at the Department of Defense on this issue?

Mr. **Bartholomew**. Yes.

Senator **Wirth**. And who do you work with at the Department of Defense? Who is your counterpart at the Department of Defense?

Mr. **Bartholomew**. It would be Paul Wolfowitz and down from there——

Senator **Wirth**. Have you had a number of meetings with Mr. Wolfowitz?

Mr. **Bartholomew**. Yes, we have had meetings. We have set up on an——

Senator **Wirth**. How many meetings have you had with Mr. Wolfowitz? How many have you sat down with Mr. Wolfowitz?

Mr. **Bartholomew**. I can't tell you how many meetings, Senator.

Senator **Wirth**. Is it two or 20?

Mr. **Bartholomew**. More than two and less than 20.

Senator **Wirth**. Well, I mean is that three?

Mr. **Bartholomew**. Senator, I can't recall.

Senator **Wirth**. Well, can you give us a general idea? Is this something that occurs on a regular basis, Mr. Bartholomew, or is this as vague as your testimony here this morning?

Mr. **Bartholomew**. There are a whole range of meetings that occur on a regular interagency basis among representatives of all of the Departments involved.

Senator **Wirth**. Why don't you give us an agenda or a calendar for the record of when those meetings have occurred. I mean I sit here and listen to the questions, very simple questions asked by the Chairman and by Senator Heinz, and we get back this fluff. You know, I had my oatmeal for the morning, and it's coming up here from your side of the table. It's a little striking when you consider how many pieces of legislation have been introduced, and the Minority Leader, your party's leader up here has introduced a major piece of legislation, and you're coming up here with these kind of oatmeal balls for this Committee.

Senator **Sarbanes**. And the Chairman and the Ranking Member of the Foreign Relations Committee have joined together in introducing legislation as well.

Senator **Wirth**. I'm really struck by this, Mr. Bartholomew, and I don't think you get it. I mean I get the impression that you don't get it that there is a sense of urgency here about this issue, and that there is a very clear sense of urgency felt by people from all across the country and felt by people about the proliferation of these kinds of weapons systems. We are now seeing major efforts being made on the nuclear side, as I'm sure you know, major efforts being made in conventional arms control and over and over and over again the emphasis is shifting to a much more complicated and much more difficult to verify and much more difficult to proceed against set of systems.

Now we know that that's the case, and I suppose the American people know that is the case and we would have expectations that the State Department of all groups would be coming up here with some kind of definitive answers to something rather than this nonsense that we've heard.

I mean I'm really struck by this and I can say these are some of the worse responses to questions I've heard in a long time, and I've been doing this for 15 years. I mean I'll be a little blunter than my two colleagues who were a little more gentle about it. I'm sitting here listening as the third person on this list, and I'm really surprised that there isn't any greater focus coming back from the State Department, and I really expected better.

Mr. **Bartholomew**. Senator, I have to most respectfully disagree with that characterization. I disagree, first of all——

Senator **Wirth**. We'll send you a copy of the transcript of your answers to this, Mr. Bartholomew.

Mr. **Bartholomew**. Senator, I think that what triggered this was my inability to tell you at this point what precise sanctions, leaving aside the question of the terms of those sanctions, we would be prepared to support. That I will accept that I cannot give you an answer to that question, and that may be wrong at this point or that may be right. I did say it is something we would like to talk further with the Congress about as we work together on a piece of legislation.

But, Senator, I outlined for you at the outset the actions that we are taking, the work that is underway and I can tell you that this is something that is being given priority, and a priority at least as high as is attached to it by the Senate. I do not think that we are insensitive to the concerns where this matter is involved, where the American people are concerned or the world is.

I think I went down specifically what we are doing in terms of our own bilateral and our own unilateral export controls. I mentioned specifically the groups and arrangements that we have made to strengthen the problem of interdicting where our own activities are concerned. I went through our role in the Australia Group and the steps that are being taken there, the conference and our own diplomatic efforts, Senator. I answered it specifically. If you have a more specific question, I will be prepared to answer it, sir.

Senator WIRTH. Well, Mr. Bartholomew, you are wonderfully deceptive in conveying your sense of urgency, and I guess maybe there is a subtlety here that I didn't quite understand, and I'm sure that analysis has been done. I didn't get much of a sense of it this morning, but perhaps, Mr. Chairman, for the record we'll get some kind of a reply back.

Thank you very much, Mr. Chairman.

Senator SARBANES. Senator Heinz, do you have any further questions?

Senator HEINZ. Mr. Chairman, I do if you will permit me.

Senator SARBANES. Well, I'm at the point of thinking that this panel is not very helpful and that we probably should move on to the next panel and that we may be able to draw some——

Senator HEINZ. Let's give him one more chance.

Senator SARBANES [continuing]. Substance from them that will help us to shape this legislation.

Senator HEINZ. Give him a break.

Senator SARBANES. Why don't you go ahead.

Senator HEINZ. Thank you, Mr. Chairman.

I would like to get one other answer to something that both witnesses had brought up, and that is when you say retroactivity, what do you mean? You said in your opening comments, Mr. Bartholomew, that you were opposed to any provision that was retroactive. What does that mean?

Mr. BARTHOLOMEW. Senator, it's my understanding that there is a provision, particularly of the Dole bill, which would have sanctions apply to a company for actions taken before the date of the bill itself, and it's retroactivity in that sense I think.

Senator HEINZ. OK, that clarifies that.

Senator SARBANES. In other words, if a company helped Libya to gain this capacity, you don't think anything should be done to that company?

Mr. BARTHOLOMEW. I think that if we're talking about the application of a law, Senator, we wouldn't want it to apply backwards to that company, which is not to say——

Senator SARBANES. Well, once they have done it and it's all done and Libya now has it, you don't think anything should be done to that company; is that right?

Mr. BARTHOLOMEW. Senator, I'm not sure about the position that would put us into. Wouldn't we have to go back and look at all companies that may or may not have at one time or another provided a chemical precursor and treat them as candidates for the application of these sanctions? I mean I think it's opening up a——

Senator SARBANES. Suppose they built the chemical plant for them to make chemical weapons. You're position on retroactivity is you can't reach back to affect that company; is that correct?

Mr. BARTHOLOMEW. Well, I think that that would be very much the case, and then the ideal——

Senator SARBANES. So they should be allowed to export into the United States and the United States should continue to procure from them and so forth even though, and let's assume in the example I'm giving that they are the responsible party for giving Libya or any other country a chemical weapons capacity. That's water over the dam, right? Is that your position?

Mr. BARTHOLOMEW. I think that if they have stopped and if the action has been taken by the company to stop whatever action it was guilty of in the past, if it is no longer in violation doing any of this, or if the government has taken action, we would not, that is correct, want the law to apply retroactively to retroactive acts of the company.

Ms. MCENTEE. Mr. Chairman, if I may add, I believe that we also feel it would be very difficult to administer, and the priority would be to get the other country to take definitive action against that company.

Senator HEINZ. I would like to, if I may, just point out an apparent inconsistency. The Bush Administration quite properly has expressed outrage and imposed a number of sanctions on the People's Republic of China for their retaliation and their sentencing and execution of students who were engaged in the democracy movement. It is not a crime for a country to put somebody to death. There is no international law safeguarding democracy.

The President has taken a position based on a moral stance and it's not an international legal stance, and I salute him for his actions of this week in particular where he has directed the U.S. Executive Directors of the the World Bank and the Asian Development Bank to oppose additional aid to the PRC. Now he is taking action against China in a sense without any basis in law. I mean he is not applying the law retroactively. He is in a sense making it up as he goes along.

What you were saying is if a commercial party is involved, they deserve to be treated better than the butchers of Beijing because we shouldn't take any action against somebody who did something bad just because we don't have a law on the books today, even if it's building a chemical weapons plant in Libya, but it's okay for the President to do whatever he wants, whenever he wants against a sovereign country. Now I support the President's action, but it seems to me that the position you're in is that we ought to treat business firms better than countries, and if that's your position, it's very hard for us to accept it, to say the least.

If you have a response to that, I would welcome it.

Ms. MCENTEE. I'm sure the State Department might want to comment more than the Commerce Department, but I believe the authority for the President's actions comes from several different bases.

Senator HEINZ. I'm not saying the President didn't act without authority. I'm just saying that he is the President, and he has got a lot of flexibility.

Ms. MCENTEE. I understand that.

Senator HEINZ. But he did not act pursuant to any law that says you can retaliate against a country that sentences to death people who are engaged in a democracy movement. There is nothing like that. My problem is I have the feeling that if we were to propose a law that said the President can sanction a country like China that sentences people to death because they advocated freedom and democracy in places like Tiananmen Square, we would get objections from the State Department that that was both extraterritorial and retroactive.

Ms. McEntee. The only comment I would make is that it's obvious the President does have the flexibility and does have the discretion to take whatever action is necessary, and what we are concerned——

Senator Heinz. You've discerned my point. My point is that the argument about retroactivity is really thin, as is the argument about extraterritoriality. We do it all the time and the President just did it. You may have some concerns about Executive flexibility——

Ms. McEntee. Exactly.

Senator Heinz [continuing]. And certainly the President has tremendous power and flexibility, but I just wanted to make the point that when it comes to retroactivity and extraterritoriality there are times when those are not legitimate bars either to legislation or to the Executive Branch taking action.

I do have one other question, Mr. Chairman, but my time is up.

Senator Sarbanes. Why don't you ask the question, and then I want to get to the next panel.

Senator Heinz. All right. I'll be very brief.

Senator Sarbanes. We need to get some substance here to try to address this serious issue.

Senator Heinz. Well, I think we just made some progress here, Mr. Chairman, and I think they just explained that the real issue is Executive flexibility.

Ms. McEntee. Senator, may I just make the same point that you made about Presidential flexibility. We have some concerns with the proposed legislation regarding the lack of Presidential flexibility.

Senator Heinz. I want to address the Australia Group for a moment, and Reginald Bartholomew did mention the Australia Group, and it seems to me that there is an opportunity to make the Australia Group a more formidable presence than it already is, and it's a very helpful presence as it is, but clearly to the extent anybody is concerned about extraterritoriality and unilateralism, it's better to have multilateralism, and we all agree with that.

Now I have proposed that the Australia Group should establish a permanent Secretariat, that it should move towards a binding decision-making system even if we had to pay the price of unanimity for that, and that there are some ways we could strengthen the group quite specifically. One, have it maintain a watch list of countries, two, use it to exchange properly sanitized intelligence information, three, have it publish and regularly update CBW control lists, fourth, maintain a denial list of companies that are violating export controls, fifth, establish rules of conduct in order to ensure that members don't take commercial advantage of each other, which is a problem we have sometimes with COCOM and, sixth, develop some enforcement incentives.

For example, I would propose, if you will, to liberalize for members within the group in the same way that we do with Section 5(5) countries under the Export Administration Act and, in addition, we could strengthen the group by working to have them assign embassy offices that are in Canberra responsibility for CBW liaison work so there is someone for the Secretariat there to work with and, as you are proposing to do at this conference, have a more formalized regular way of bringing industries' experience and advice to bear on the process.

My question to you is does the Administration support what I have just laid out?

Mr. BARTHOLOMEW. We've got an open mind on steps such as that, Senator Heinz. That is to say, we've got to work them out with the people concerned, the idea of a Secretariat, the idea of giving more form and more structure along the lines that you've——

Senator HEINZ. Could you develop a specific position? I would like to know whether you are for it some of it, for all of it, against some of it or against all of it.

Mr. BARTHOLOMEW. We would support steps in that direction. What we want to be careful to do is to shape them in ways where we don't run into problems, and let me give you an example of one of our concerns, for example.

With a formal Secretariat we have right now very important and sensitive intelligence exchanges among ourselves. We are ourselves not sure what having a formal Secretariat might do to that kind of exchange. That's one question that we want to look at.

Senator HEINZ. In an effort to move the hearing along, let's do this. I have put on the record a series of specific proposals.

Mr. BARTHOLOMEW. I will give you a response.

Senator HEINZ. I would appreciate thoughtful comment on each one, but I would prefer not to get comments as on the one hand and on the other, you know. I would prefer to have comments that come to a conclusion that says this is something we do not think is doable right now, this is something that should be a high priority and we are prepared to make it a high priority, this is something that is good but is a second priority and this is something that is terrible and it would be the end of the world. I would like have you evaluate and rank not only in terms of your a priori basis of reasoning, but in terms of any negotiations or direction the Administration would like to be heading in.

Mr. BARTHOLOMEW. Would you permit it, I would happy to provide that, Senator, but would you permit me to provide it, at least in part, on a classified basis?

Senator HEINZ. Absolutely.

Mr. BARTHOLOMEW. I should tell you, Senator, that we have taken steps that go in that direction in terms of beefing up the Australian group. We just agreed to guidelines, for example, on sharing information between us in cases when one of us has gotten a license and canceled it or denied a license to make sure that everybody knows what is going on so we can develop a patent of requests. We have also got guidelines that designed to inhibit the member governments from taking commercial advantage of this.

Senator, may I take this opportunity to make a comment on sanctions again?

Senator HEINZ. If you are willing to wade into that hot water again, go ahead.

Mr. **BARTHOLOMEW**. Senator Sarbanes, I would like to provide you subsequently a statement on the questions that you asked on sanctions. May I say that I think my understanding as opposed to what the formal Administration position is, my understanding is that the sanctions, such that are in the Pell list, are acceptable and no problem. The question revolves essentially and mainly around the other elements of how to implement them and everything you put under that heading.

But I could address this further in a communication to you, sir.

Senator **SARBANES**. Well, I think you better do it that way. I think we should move to the next panel.

I have to tell you very bluntly, this has been a very sorry performance. Now, the President has indicated on occasion his own deep concern about this issue, and you've made a major point of Executive discretion. How can you expect Congress to even think of extending Executive discretion when we get the kind of attitudes that have been reflected at this witness table this morning on this issue?

Now, a quarter of the Members of the Senate have co-sponsored these bills. I haven't even co-sponsored one myself. We're trying to work out a proper bill. I would think if you put it to Members, you would have an overwhelming majority of them on this legislation. It's clearly bipartisan and the mix is almost equal Democrats and Republicans. In fact, I think there are a few more Republicans than Democrats, and we get this. What's going on downtown on working on this issue?

I mean the two of you have never met before I gather, or not on this issue at least.

Ms. **MCENTEE**. Mr. Chairman, we should point out that our staffs, especially on the technical level, have spent numerous hours of communicating——

Senator **SARBANES**. But this thing is above the technical level because you don't have a policy position. We put questions to you this morning and there is no policy position. We are now being told well, we'll try to get back to you with a policy position.

Mr. **BARTHOLOMEW**. Senator, the only question on which I have, to my knowledge, not given you a policy position is the specific sanctions, and that I would——

Senator **SARBANES**. Well, that's a pretty big question, isn't it? I mean that's what this legislation is all about. If we don't have the sanctions, there is no legislation. One position is we don't want any more sanctions and we don't need them, and your position, well, I just don't know, what your position is; the legislation is all about is additional sanctions. There wouldn't be any legislation before us if we weren't considering the issue of additional sanctions, either, on other countries or on companies.

Mr. **BARTHOLOMEW**. Senator, I said that we would——

Senator **SARBANES**. Well, we thank you for being here this morning.

Mr. **BARTHOLOMEW**. Thank you, Senator.

Senator **SARBANES**. If our second panel would please come forward, Ms. Harris, Mr. Dunn and Mr. Turnipseed.

Well, the Subcommittee is pleased to have you here, and Ms. Harris, why don't we start with you, and then we will move right across to Mr. Dunn and then to Mr. Turnipseed, unless you have conferred amongst yourselves and arrived at some other order that you think might be more appropriate.

Ms. HARRIS. I think this is fine, Mr. Chairman.

STATEMENT OF ELISA D. HARRIS, GUEST SCHOLAR, BROOKINGS INSTITUTION, WASHINGTON, DC

Ms. HARRIS. Mr. Chairman, I would like to thank the Subcommittee for inviting me to testify this morning on the problem of chemical weapons proliferation outside NATO and the Warsaw Pact.

I have an opening statement, but would appreciate if the full text of my statement as well as a recent article I authored on the subject could be part of the hearing record.

Senator SARBANES. It will be included in the record, and please go ahead and so as much of your statement as you feel is necessary in order to get across your views on the substance of this issue.

Ms. HARRIS. All right. Thank you.

My testimony this morning begins by discussing the nature and extent of the problem, particularly which countries are believed to have chemical weapons as well as why and how they acquired their capability. It then suggests some reasons why the international community should be concerned about chemical weapons proliferation. Finally, it discusses policy options for halting the spread of chemical weapons, including sanctions legislation.

So first let me turn to the problem.

Those of us who have tried to explore the problem of chemical weapons proliferation outside NATO and the Warsaw Pact have encountered a variety of obstacles.

First and foremost among them has been the reluctance of most governments to identify specific chemical weapons states. Instead, government officials speaking on the record have tended to characterize the problem in terms of the number of such states. Even these numerical estimates, however, are imprecise and somewhat contradictory.

A second problem we have encountered while trying to analyze the CW proliferation problem is that government officials generally do not explain how they define a chemical weapons state. After all, having the capacity to produce chemical warfare agents is very different from actually possessing a chemical weapons stockpile.

There are probably a variety of reasons why governments generally do not identify CW possessor states and are not more specific in discussing capabilities.

In some cases they may be uncertain about precisely who does in fact have what capability. After all, any country with a petrochemical, pesticide, fertilizer or pharmaceutical industry has the potential in terms of equipment, raw materials and technical expertise to produce chemical warfare agents.

Governments may also remain silent in order to avoid drawing attention to chemical weapons programs acquired with the assistance, wittingly or unwittingly, of their own chemical companies. In other cases they may have political interests that preclude them from embarrassing new entrants to the chemical club.

Finally, governments may fear that if they are more forthcoming with information about the chemical warfare activities of specific states, the sources of this information and the methods by which it was acquired might be compromised.

This brings us to our third problem, that of the credibility of the available information. The U.S. Government, it must be acknowledged, has been more forthcoming than most others in terms of releasing information, but the fact remains that much of what we know about chemical weapons programs in the developing world comes from press reports citing unnamed government officials and/or what are said to be classified documents.

This credibility problem is not necessarily helped by multiple press reports containing the same basic information, as these may all be derived from the same initial source or report. Erroneous information may thus be unintentionally perpetuated.

It is also possible that false or exaggerated reports of CW proliferation may be propagated intentionally. Concern about CW proliferation can be used to increase support for national CW programs. CW possession or use charges also can be useful for discrediting a domestic or foreign adversary. Indeed, many of the more doubtful chemical weapons charges probably fall in this category.

In light of all of these difficulties, those of us who try to analyze this subject must be clear about the sources of our information. I do not have access to intelligence data or any form of classified information. My conclusions, therefore, about the CW programs of specific countries are based entirely on publicly available information. I am not in a position to be able to say whether a given country has chemical weapons. The most that I can do is to try and organize the available information in a useful fashion.

The specific criteria I have developed for this purpose are the following.

Known chemical weapons States are those who have either declared that they possess chemical weapons or whose use of such weapons has been definitively confirmed.

Probable chemical weapons States are those reported by NATO or Western government officials on or off the record as producing chemical weapons, possessing chemical weapons under national control or using chemical weapons.

Seeking to possess CW States are those reported by NATO or Western officials on or off the record as trying to acquire chemical weapons.

Finally, doubtful CW States are those reported generally by domestic or foreign adversaries as possessing CW under national control or of using chemical weapons with no confirmation by Western officials.

On the basis of these criteria, Iraq is the only non-NATO/Warsaw Pact country known to possess chemical weapons. Eleven other countries, largely in the developing world, are probable CW States. The CW capabilities of eight of these countries have been mentioned in press reports citing U.S. officials speaking on the record. They include the following: Burma, China, Iran, North Korea, Syria, Taiwan, Vietnam and, most recently, Libya. The three remaining countries, Egypt, Ethiopia and Israel, have been discussed in press reports citing unnamed U.S. Government officials and classified documents. South Korea has been identified by unnamed officials as a country seeking to possess chemical weapons.

At least 18 other countries have been accused of either possessing or using chemical weapons, but there has been no confirmation of these claims either on or off the record by NATO or Western officials.

It is difficult to know with any certainty why Iraq, the 11 probably CW states and South Korea might have decided to acquire chemical weapons. It is possible, however, to draw some tentative conclusions about the role of political and military incentives in the CW policy decisions of these country based on publicly available information.

It would appear that none of these countries acquired chemical weapons for reasons of political prestige. In order for chemical weapons to have political value as the poor man's weapon of mass destruction, possessor status would have to be known and acknowledged by the country concerned. Yet even Iraq did not openly acknowledge its CW activities until July of 1988. Indeed, many countries have emphasized just the contrary, that they do not possess chemical weapons.

This suggests that chemical weapons do not have the same sort of prestige value as nuclear weapons, and that decisions in the developing world to acquire chemical weapons are based largely on military rather than political incentives.

Developing countries may in fact view the military utility of chemical weapons differently than industrialized states. As a consequence, they may have a variety of military incentives for acquiring such weapons. For example, in some countries chemical weapons may have been acquired for use in counter-insurgency operations in their own or neighboring states.

Developing countries facing superior conventional forces may also have a powerful incentive for acquiring chemical weapons. Countries in the developing world may also have acquired chemical weapons in order to deter enemy chemical use through the threat of retaliation in kind.

Finally, at least some development countries may have acquired chemical weapons in part to counter an adversary's nuclear capability.

The CW acquisition decisions of these countries, therefore, may have reflected a variety of military incentives. These military incentives probably outweighed existing moral and legal constraints on chemical warfare which, in any event, have probably weakened in recent years. CW armament programs in the developing world probably have been helped even more by the erosion of technological barriers to CW acquisition.

Countries interested in acquiring chemical weapons can either bypass the technological problems altogether by procuring such weapons from other chemical weapons states or can seek to develop their chemical weapons production capability by purchasing the necessary equipment and chemicals on the international market.

Five developing countries may have previously received chemical weapons directly from the Soviet Union. Chemical weapons and technical assistance may also have been provided by one developing country to another. A majority of these countries, however, are now said to possess indigenous chemical weapons production capabilities often developed with equipment and chemicals purchased from Western companies.

Let me now turn briefly to the implications of all this.

There has of course been much handwringing of late about the alleged Libyan chemical weapons plant at Rabta, but almost no discussion of the wider implications of CW proliferation. So let me suggest a few reasons why the international community and this country in particular should be concerned about the spread of chemical weapons more generally.

CW proliferation could make conflict itself more likely, particularly in unstable regions such as the Middle East. Following confirmation of Iraq's use of chemical weapons in the Gulf War, there were reports that the United States had examined the feasibility of air strikes against Iraqi CW sites. More recently, Israel was reported to be considering a preemptive strike against a Syrian installation said to be developing nerve agent warheads for their SS-21 and SCUD missiles. Either of these strikes could have led to a military confrontation between the countries involved.

CW proliferation could also make conflict more destructive, especially in areas such as the Middle East and Asia where ballistic missiles are also proliferating. During the Gulf War, Iraq and Iran used conventionally armed missiles in their attacks on each other's cities. In the final months of the war, however, Iraq reportedly threatened to launch chemical strikes against large Iranian cities. At least seven other probable chemical weapons states also possess ballistic missiles which could be modified to carry chemical warheads.

The use of chemically armed ballistic missiles by any of these countries could lead to unprecedented civilian casualties. Moreover, if chemically armed ballistic missiles were used against Israel, it could even trigger a nuclear response.

The proliferation of chemical weapons and of sophisticated delivery means like ballistic missiles also has implications for the United States and the Soviet Union. With this type of military power in the hands of developing countries, both the U.S. and the Soviet Union may find it increasingly difficult to pursue their regional interests.

More importantly, the use of chemically armed ballistic missiles in a region like the Middle East could draw the Super Powers in on the side of their respective allies, culminating in conflict between East and West as well.

Let me turn in conclusion to some possible solutions to this problem.

Senator SARBANES. Ms. Harris, your light is on, but I want you to go ahead and take what time you need to talk about the possible solutions. So please go ahead.

Ms. HARRIS. Thank you, Mr. Chairman.

Various ideas have been put forward in recent years to deal with the problem of chemical weapons proliferation. In November 1985, General Secretary Gorbachev suggested that the United States and the Soviet Union consider developing a treaty to curb the spread of chemical weapons. It quickly became apparent, however, that a chemical non-proliferation treaty was a non-starter politically.

Developing countries opposed the creation of another discriminatory nuclear non-proliferation treaty type of arrangement which would allow existing members of the chemical club to retain their chemical weapons, but would prohibit the have-nots from acquiring them.

The United States and other Western countries viewed efforts to conclude such an agreement as a distraction from the negotiations in Geneva aimed at banning chemical weapons.

A second idea that has been pursued since 1984 has been that of export controls on the precursor chemicals needed to make chemical agents. But as the Libyan chemical weapons plant at Rabta has shown, chemical export controls alone will not stem the proliferation of chemical weapons. Export controls will not prevent countries that already possess civil chemical industries from developing at least some chemical warfare agents.

Moreover, a determined state may be able to evade export controls entirely by procuring uncontrolled chemicals, by setting up front companies or by dealing with unscrupulous chemical traders or manufacturers.

At best, export controls will make it more difficult and costly for the potential proliferator to acquire chemical weapons and may provide supplier countries with early warning of such proliferation.

Congress has suggested a third idea for halting the spread and use of chemical weapons, sanctions against companies who provide chemical material and technology to proliferating states and against countries that actually use chemical and biological weapons.

This legislation has tremendous political value. It sends a clear message that the United States is not only concerned about the spread and use of chemical weapons, but is determined to take whatever steps are necessary to halt these developments.

The real significance of this legislation, however, lies in its potential impact on international behavior. Sanctions against suppliers will force companies to look very carefully at orders for the items they provide. This in turn should make it that much harder for proliferators to develop a CW capability.

Sanctions against users should help deter future violations of the Geneva Protocol. Countries will no longer be able to conclude, as Iraq did during the Gulf War, that the use of these prohibited weapons carries no military or economic price.

Yet before adopting sanctions legislation, Congress must clarify a number of issues.

Are the reports to be compiled by the President on CBW proliferation to include all countries, including friends and allies such as Egypt and Israel?

What criteria will be used to determine whether a country should be listed in these reports?

Similarly, what standard of evidence will be used to determine whether a violation has occurred?

Finally, how will the sanctions be enforced?

Two additional points concerning sanctions legislation need to be emphasized.

First, if other countries are to take our non-proliferation efforts seriously, we must ensure that these sanctions are not perceived as a clever way of denying foreign companies U.S. Government contracts or access to the U.S. market. Accordingly, U.S. and foreign companies should be subject to the same sanctions so as to avoid even the appearance of protectionism.

Second, we must convince other countries to join us in imposing tighter controls on the export of relevant chemicals and in adopting tough sanctions against those that violate these controls or that use chemical and biological weapons. A multilateral approach to halting CW proliferation and use will not only be more effective, but it will avoid the problem of U.S. laws being imposed on foreign nationals.

Sanctions against suppliers and users will of course be most effective when coupled to a verifiable, global ban on chemical weapons. Such a treaty is currently in an advanced stage of negotiation at the 40-nation Conference on Disarmament in Geneva. The prospects of bringing these negotiations to a successful conclusion are brighter now than ever, not least because of President Bush's personal commitment to such a treaty as articulated in last year's Presidential election campaign. Nearly 150 other countries pledged their support for a chemical weapons ban at the Paris meeting on chemical weapons this past January.

Let us seize this historic opportunity to eliminate what President Bush has called "this terrible scourge" from the face of the earth.

Thank you, Mr. Chairman.

Senator SARBANES. Thank you very much, Ms. Harris.

[The prepared statement of Elisa Harris follows:]

PREPARED STATEMENT

TESTIMONY OF ELISA D. HARRIS

GUEST SCHOLAR

THE BROOKINGS INSTITUTION

SSRC-MACARTHUR FOUNDATION FELLOW IN INTERNATIONAL PEACE AND SECURITY STUDIES

BEFORE THE SUBCOMMITTEE ON INTERNATIONAL FINANCE AND MONETARY POLICY

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS

U.S. SENATE

JUNE 22, 1989

Mr. Chairman, I would like to thank the Subcommittee for inviting me to testify this morning on the problem of chemical weapons proliferation outside NATO and the Warsaw Pact. I have a brief opening statement, but would appreciate if the full text of my statement as well as a recent article I authored on the subject could be made part of the hearing record.

My testimony this morning begins by discussing the nature and extent of the problem, particularly which countries are believed to have chemical weapons as well as why and how they acquired their capability. It then suggests some reasons why the international community should be concerned about chemical weapons proliferation. Finally, it discusses policy options for halting the spread of chemical weapons, including sanctions legislation.

THE PROBLEM

Those of us who have tried to explore the problem of chemical weapons proliferation outside NATO and the Warsaw Pact have encountered a variety of obstacles. First and foremost among them has been the reluctance of most governments to identify specific chemical weapons states. Instead, government officials speaking on the record have tended to characterize the problem in terms of the number of such states. Even these numerical estimates, however, are imprecise and somewhat contradictory.

A second problem we have encountered while trying to analyze the CW proliferation issue is that government officials generally do not explain how they define a chemical weapons state. After all, having the capacity to produce chemical warfare agents is very different from actually possessing a stockpile of chemical weapons.

There are probably a variety of reasons why governments generally do not identify CW possessor states and are not more specific in discussing capabilities. In some cases, they may be uncertain about precisely who does in fact have what capability. After all, any country with a petrochemical, pesticide, fertilizer, or pharmaceutical industry has the potential, in terms of equipment, raw materials and technical expertise, to produce some chemical warfare agents. Governments may also remain silent in order to avoid drawing attention to chemical weapons programs acquired with the assistance, wittingly or unwittingly, of their own chemical companies. In other cases, they may have political interests that preclude them from embarassing new entrants to the chemical club. Finally, governments may fear that if they are more forthcoming with information about the chemical warfare activities of specific states, the sources of this information, and the methods by which it was acquired, might be compromised.

This brings us to our third problem, that of the credibility of the available information. The U.S. government, it must be acknowledged, has been more forthcoming than most others in terms of releasing information. But the fact remains that much of what we know about chemical weapons programs in the developing world comes from press reports citing unnamed government officials and/or what are said to be classified documents. This credibility problem is not necessarily helped by multiple press reports containing the same basic information, as these may all be derived from the same initial source or report. Erroneous information may thus be unintentionally perpetuated.

It is also possible that false or exaggerated reports of CW proliferation may be propagated intentionally. Concern about CW proliferation can be used to increase support for national CW armament programs. CW possession or use charges also can be useful for discrediting a domestic or foreign adversary. Indeed, many of the more doubtful chemical weapons charges probably fall in this category.

In light of all of these difficulties, those of us who try to analyze this subject must be clear about the sources of our information. I do not have access to intelligence data. My conclusions, therefore, about the CW programs of specific countries are based entirely on publicly available information. I am not in a position to be able to say whether a given country has chemical weapons. The most that I can do is to try and organize the available information in a useful fashion. The specific criteria I have developed for this purpose are:

- o Known CW states are those who have either declared that they possess chemical weapons or whose use of such weapons has been definitively confirmed.
- o Probable CW states are those reported by NATO or Western government officials, on or off the record, as producing chemical weapons, possessing chemical weapons under national control, or using chemical weapons.
- o Seeking to possess CW states are those reported by NATO or Western government officials, on or off the record, as trying to acquire chemical weapons.
- o Doubtful CW states are those reported, generally by domestic or foreign adversaries, as possessing CW under national control or of using chemical weapons, with no confirmation by NATO or Western government officials.

On the basis of these criteria, Iraq is the only non-NATO/Warsaw Pact country known to possess chemical weapons. Eleven other countries, largely in the developing world, are probable CW states. The CW capabilities of eight of these countries have been mentioned in press reports citing US government officials speaking on the record. They include Burma, China, Iran, North Korea, Syria, Taiwan, Vietnam and, most recently, Libya. The three remaining countries, Egypt, Ethiopia, and Israel, have been discussed in press reports citing unnamed US government officials and classified documents. South Korea has been identified by unnamed US government officials as a country seeking to possess chemical weapons.

At least eighteen other countries have been accused of either possessing or using chemical weapons, but there has been no confirmation of these claims, either on or off the record, by NATO or Western government officials. These doubtful chemical weapons states include Afghanistan, Angola, Argentina, Chad, Chile, Cuba, El Salvador, Guatemala, India, Indonesia, Laos, Mozambique, Nicaragua, Pakistan, Peru, the Philippines, South Africa, and Thailand.

It is difficult to know with any certainty why Iraq, the eleven probable CW states, and South Korea might have decided to acquire chemical weapons. It is possible, however, to draw some tentative conclusions about the role of political and military incentives in the CW policy decisions of these countries based on publicly available information.

It would appear that none of these countries acquired chemical weapons for reasons of political prestige. In order for chemical weapons to have political value as the "poor man's weapon of mass destruction," possessor status would have to be known and acknowledged by the country concerned. Yet even Iraq did not openly acknowledge its CW activities until July 1988. Indeed, many countries have emphasized just the contrary--that they do not possess chemical weapons. Among the probable CW states that have denied possession are Burma, China, Egypt, Ethiopia, Israel, and Libya. Doubtful CW states that have denied possession include India, Indonesia, Pakistan, Peru, and the Philippines. This suggests that chemical weapons do not have the same sort of prestige value as nuclear weapons, and that decisions in the developing world to acquire chemical weapons are based largely on military rather than political incentives.

Developing countries may, in fact, view the military utility of chemical weapons differently than industrialized states. As a consequence, developing countries may have a variety of military incentives for acquiring such weapons. For example, in at least five countries chemical weapons may have been acquired for use in counter insurgency operations in their own or neighboring states. Iraq's initial decision to obtain chemical weapons may have been related to its long history of problems with its Kurdish population. Burma is said to have acquired chemical weapons to quell domestic insurgents. Egypt used chemical weapons during its intervention in the civil war in Yemen in the 1960s. Ethiopia has had a longstanding problem with Eritrean secessionists. Finally, Vietnam has been accused by the U.S. government of using the so-called yellow rain mycotoxins and other unidentified chemical agents against the Hmong in neighboring Laos and against resistance forces in Kampuchea.

Developing countries facing superior conventional forces may also have a powerful incentive for acquiring chemical weapons. Iraq's more recent chemical weapons program probably was a response to the Iranian human wave attacks in the Gulf war. The Egyptian and Syrian CW efforts may be related to Israel's conventional superiority, particularly its highly effective air force. Ethiopia may value chemical weapons for use in its longstanding conflict with Somalia over the Ogaden. Libya is reported to have acquired and used chemical weapons in its war with neighboring Chad. North Korea may have obtained chemical weapons for use against South Korean and U.S. conventional forces. Taiwan's chemical weapons are reportedly designed to thwart an invasion from mainland China. Finally, Vietnam is reported to have used chemical weapons in 1979 against Chinese intervention forces.

At least four countries in the developing world may have acquired chemical weapons in order to deter enemy chemical use through the threat of retaliation in kind. Reports that China suffered chemical attacks during border skirmishes with the Soviet Union in 1969 and during its intervention in Vietnam in 1979 suggest a strong motive for a Chinese CW program. Iran almost certainly has acquired chemical weapons in response to Iraqi CW use in the Gulf war. Israel is reported to have obtained chemical weapons in the

1970s in response to the CW threat from Egypt. South Korea's efforts to acquire chemical weapons are probably linked to the CW program of its chief rival, North Korea.

Finally, at least some developing countries may have acquired chemical weapons in part to counter an adversary's nuclear capability. Israel's alleged nuclear program, for example, may have stimulated the CW efforts of a number of Arab countries, including Iraq, Egypt, and Syria.

The CW acquisition decisions of these countries, therefore, may have reflected a variety of military incentives. These military incentives probably outweighed existing moral and legal constraints on chemical warfare which, in any event, may have weakened in recent years. CW armament programs in the developing world probably have been helped even more by the erosion of technological barriers to CW acquisition.

Countries interested in acquiring chemical weapons can either bypass the technological problems altogether by procuring such weapons from other CW states, or can seek to develop their own chemical weapons production capability by purchasing the necessary equipment and chemicals on the international market.

Five developing countries may have previously received chemical weapons directly from the Soviet Union. These include Egypt, Ethiopia, Libya, Syria and Vietnam. Chemical weapons and technical assistance may also have been provided by one country to another. Syria is reported to have helped the Iranian CW effort, Iran is said to have supplied chemical weapons to Libya in return for Soviet-made mines, while Israel is reported to have provided chemical agents to Taiwan, and advice on CW matters to the Chinese. A majority of these countries, however, are now said to possess indigenous chemical weapons production capabilities, often developed with equipment and chemicals purchased from Western companies. These include Iraq, Burma, China, Iran, Israel, Libya, North Korea, Syria, Taiwan, and Vietnam. Egypt may also have its own CW production capability. The Soviet role in the CW proliferation problem has thus almost surely been overstated.

IMPLICATIONS

There has been much handwringing of late about the alleged Libyan chemical weapons plant, but almost no discussion of the wider implications of CW proliferation. Let me suggest a few reasons, therefore, why the international community should be concerned about the spread of chemical wepons more generally.

CW proliferation could make conflict itself more likely, particularly in unstable regions such as the Middle East. Following confirmation of Iraq's use of chemical weapons in the Gulf war, there were reports that the United States had examined the feasibility of air strikes against Iraqi CW sites. More recently, Israel was reported to be considering a pre-emptive strike against a Syrian installation said to be developing nerve agent warheads for SS-21 and SCUD missiles. Either of these strikes could have led to a military confrontation between the countries involved.

CW proliferation could also make conflict more destructive, especially in areas such as the Middle East and Asia, where ballistic missiles are also proliferating. During the Gulf war, Iraq and Iran used conventionally armed missiles in their attacks on each other's cities. In the final months of the war, however, Iraq reportedly threatened to launch chemical strikes against large Iranian cities. At least seven other probable CW states -- China, Egypt, Israel, Libya, North Korea, Syria, and Taiwan -- also possess ballistic missiles which could be modified to carry chemical warheads. South Korea also has a conventional ballistic missile capability. The use of chemically armed ballistic missiles by any of these countries could lead to unprecedented civilian casualties. Moreover, if chemically armed ballistic missiles were used against Israel, it could even trigger a nuclear response.

The proliferation of chemical weapons, and of sophisticated delivery means like ballistic missiles, also has implications for the United States and the Soviet Union. With this type of military power in the hands of developing countries, both countries may find it increasingly difficult to pursue their regional interests. More importantly, the use of chemically armed ballistic missiles in a region like the Middle East could draw the superpowers in on the side of their respective allies, culminating in conflict between East and West, as well.

POSSIBLE SOLUTIONS

Various ideas have been put forward in recent years to deal with the problem of chemical weapons proliferation. In November 1985, General Secretary Gorbachev suggested that the United States and the Soviet Union consider developing a treaty to curb the spread of chemical weapons. It quickly became apparent, however, that a chemical non-proliferation treaty was a non-starter politically. Developing countries opposed the creation of another discriminatory Nuclear NonProliferation Treaty-type of arrangement which would allow existing members of the chemical club to retain their chemical weapons but would prohibit the have-nots from acquiring them. The United States and other Western countries viewed efforts to conclude such an agreement as a distraction from the negotiations in Geneva aimed at banning chemical weapons.

A second idea that has been pursued since 1984, when it became clear that Iraq's chemical weapons had been produced with chemicals and equipment purchased from Western chemical companies, has been that of export controls on the precursor chemicals needed to make chemical agents. But as the Libyan chemical weapons plant at Rabta has shown, chemical export controls alone will not stem the proliferation of chemical weapons. Export controls will not prevent countries that already possess civil chemical industries from developing at least some chemical warfare agents. Moreover, a determined state may be able to evade export controls entirely by procuring uncontrolled chemicals, by setting up front companies, or by dealing with unscrupulous chemical traders or manufacturers. At best, export controls will make it more difficult and costly for the potential proliferator to acquire chemical weapons and may provide supplier countries with early warning of such proliferation.

Congress has suggested a third idea for halting the spread and use of chemical weapons: sanctions against companies who provide chemical material and technology to proliferating states, and against countries that actually use chemical or biological weapons. This legislation has tremendous political value. It sends a clear message that the United States is not only concerned about the spread and use of chemical weapons, but is determined to take whatever steps are necesssary to halt these developments. The real significance of this legislation, however, lies in its potential impact on international behavior. Sanctions against suppliers will force companies to look very carefully at orders for the items they provide. This, in turn, should make it that much harder for proliferators to develop a CW capability. Sanctions against users should help deter future violations of the Geneva Protocol. Countries will no longer be able to conclude, as Iraq did during the Gulf War, that the use of these prohibited weapons carries no military or economic price.

Yet before adopting sanctions legislation, Congress must clarify a number of issues. Are the reports to be compiled by the President on CBW proliferation to include all countries, including friends and allies such as

Egypt and Israel? What criteria will be used to determine whether a country should be listed in these reports? Similarly, what standard of evidence will be used to determine whether a violation has occurred? Finally, how will the sanctions be enforced?

Two additional points concerning sanctions legislation need to be emphasized. First, if other countries are to take our chemical non-proliferation efforts seriously, we must ensure that these sanctions are not perceived as a clever way of denying foreign companies U.S. government contracts or access to the U.S. market. Accordingly, U.S. and foreign companies should be subject to the same sanctions so as to avoid even the appearance of protectionism.

Second, we must convince other countries to join us in imposing tighter controls on the export of relevant chemicals and technology and in adopting tough sanctions against those that violate these controls or that use chemical or biological weapons. A multilateral approach to halting CW proliferation and use will will not only be more effective, but it will avoid the problem of U.S. laws being imposed upon foreign nationals.

Sanctions against suppliers and users will, of course, be most effective when coupled to a verifiable global ban on chemical weapons. Such a treaty is currently in an advanced stage of negotiation at the 40 nation Conference on Disarmament in Geneva. The prospects of bringing these negotiations to a successsful conclusion are brighter now than ever, not least because of President Bush's personal commitment to such a treaty, as articulated in last year's presidential election campaign. Nearly 150 other countries pledged their support for a chemical weapons ban at the Paris meeting on chemical weapons this past January. Let us seize this historic opportunity to eliminate what President Bush has called "this terrible scourge" from the face of the earth.

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Chemical Weapons Proliferation in the Developing World

ELISA D. HARRIS

The author is an SSRC–MacArthur Foundation fellow in international peace and security studies, and a doctoral candidate in international relations at the University of Oxford. This chapter was written while she was a visiting research fellow at the Royal United Services Institute for Defence Studies.

THROUGHOUT THE 1960s and 1970s, concerns about nuclear proliferation and about limiting Superpower nuclear arsenals overshadowed the subject of chemical weapons (CW) and their control. This situation changed abruptly in 1984, when the United Nations confirmed that chemical weapons were being used in the Gulf War.[1] More recent reports of biological weapons proliferation,[2] and of the proliferation of ballistic missiles in unstable regions such as the Middle East,[3] have only served to heighten concerns about the spread of non-nuclear weapons of mass destruction in the developing world.

Many believe that the threat to international security posed by chemical weapons proliferation and use now rivals that of nuclear weapons. As Kenneth Adelman, the director of the US Arms Control and Disarmament Agency (ACDA), told a Senate hearing in 1984,

> when I look to the remainder of this century and what kind of threats there are to security around the world, I personally put the threat of a nuclear war low, very low. I personally put the increasing use of chemical weapons around the world high.[4]

Others, however, point to differing estimates of the number of CW possessor states, and to conflicting reports concerning the identities and capabilities of such states, and question whether the CW proliferation problem is as serious as government officials suggest.[5]

This article explores the nature of the CW proliferation problem in the developing world by examining the following questions. Why might Third World countries decide to acquire chemical weapons, and what factors may constrain such acquisition? How extensive is the CW proliferation problem?

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What have been the national and international responses to the threat of CW proliferation? Finally, what are the likely implications if the CW proliferation problem is as serious as some suggest, and is not brought under control?

INCENTIVES FOR AND CONSTRAINTS ON CW PROLIFERATION

It is difficult to know precisely why Third World countries might decide to acquire chemical weapons. In each individual case, policymakers will undoubtedly be influenced by a variety of factors unique to their particular situation. In what follows, an attempt will be made to identify in more general terms possible incentives for, as well as constraints on, CW proliferation in the developing world.[6] The incentives for acquiring chemical weapons may be both political and military in nature. The constraints on CW acquisition are likely to be of a moral, legal, and technical character.

One reason why Third World countries may develop an interest in chemical weapons is because they may believe that such weapons have political value. In the 1950s, the United Kingdom and France acquired nuclear weapons in part because membership of the "nuclear club" ensured these countries great power status. As Lord Cherwell argued at the time,

> [i]f we are unable to make bombs ourselves and have to rely entirely on the United States army for this vital weapon we shall sink to the rank of a second-class nation, only permitted to supply auxiliary troops, like the native levies who were allowed small arms but not artillery.[7]

Although chemical weapons may not have the same prestige value as nuclear weapons, for developing countries unable to acquire a nuclear option CW may be an attractive alternative. Chemical weapons have long been characterised as "the poor man's weapon of mass destruction". Third World interest in acquiring CW may in part reflect this perception.

A second reason why Third World countries may develop an interest in chemical weapons is because they may believe that such weapons have military value. In the West, chemical weapons have generally been viewed as having relatively low military utility. On the battlefield, sudden changes in weather conditions can render the effects of chemical weapons use unpredictable. In addition, most Western military forces are equipped with protective gear such as gas masks and suits which are able to counter the effects of traditional chemical agents. Finally, Western forces have available to them conventional as well as nuclear weapons with equal or better military characteristics.

The military utility of chemical weapons may, however, be judged differently in the developing world, particularly in situations where predictability is less important, and where both chemical protection and sophisticated conventional and nuclear weapons are simply unavailable. As Ricardo Fraile, a Chemical and Biological Warfare (CBW) consultant, explains:

> The chemical weapons used by the Third World do not have to be sophisticated since the people they are used against do not have any protection. A simple gas like mustard gas can be very effective against men who do not have protective clothing.[8]

Every confirmed use of chemical weapons since the First World War has, in fact, involved a Third World country lacking chemical protection, and has shown CW to be effective both in military terms and in terms of its terror-inducing effects. This was true of the use of chemical weapons by Spain in Morocco in 1925, by the Soviet Union in China in 1934, by Italy in Ethiopia between 1935–36, by Japan in China between 1937–45, by Egypt in Yemen between 1963–67[9] and, more recently, by Iraq in the Gulf War.

Third World countries may therefore see CW as an effective means of accomplishing a number of different military missions. They can be used in counter insurgency operations to flush guerrillas out of hard to reach areas and to terrorise their domestic supporters. Chemical weapons can also be used to counter an adverary's superior conventional forces. For a country facing large concentrations of enemy troops, CW can be a vital force multiplier. They can also be used to paralyse enemy air power on the ground, rendering it vulnerable to follow on attacks with conventional high explosives. Chemical weapons can also be acquired for the traditional purpose of deterring enemy chemical use through the threat of retaliation in-kind. Finally, because of their potential for mass destruction, CW can serve as a counter to an adversary's nuclear capability.

In deciding whether to acquire chemical weapons, developing countries are likely to consider these types of political and military incentives.The CW policy decisions of Third World countries are also likely to be influenced by various moral, legal, and technical constraints. These constraints on the acquisition of CW may now, however, be breaking down.

In the West, chemical weapons have traditionally been viewed as particularly immoral and inhumane. The Romans, for example, are said to have decreed "'Armis bella non veneris geri,' war is waged with weapons, not with poisons".[10] In 1855, Lord Dundonald's plan to use poison sulphur in the Crimean War was rejected on the grounds that the "effect of the chemical weapon is so horrible that no honourable combatant can use it".[11] But it was the First World War, in which some 113,000 tons of chemical agents resulted in an estimated 1.3 million gas casualties,[12] that really crystallised Western revulsion to poison gas. Although Third World countries did not share this particular experience, a number of them did, as noted earlier, fall victim to chemical attacks in subsequent years. Third World interest in chemical weapons, like that in much of the West, might therefore be dampened by the moral revulsion arising from these earlier experiences.

It is possible, however, that the example set by the United States and the Soviet Union in the CW area might be eroding this longstanding moral constraint. Interestingly enough, the US Arms Control and Disarmament Agency opposed new US chemical weapons production in 1974 partly out of concern about the effect of such a step on CW proliferation. As Fred Ikle, the Director of ACDA, explained at the time,

> If we start on a new type of production program . . . such an effort, particularly if it became large-scale, might stimulate third countries to make new efforts in the production of chemical weapons, a type of weapon which could be adversely used against our allies, our friends, or even us, and where the technology is not all that difficult to obtain for a large number of countries.[13]

In December 1987, the United States began to produce chemical weapons again for the first time since 1969. Although General Secretary Mikhail Gorbachev announced the cessation of Soviet chemical weapons production in April 1987, the Soviet Union is believed to have maintained an active CW production programme throughout the 1970s and 1980s.[14] This programme may have influenced Third World thinking about the morality of chemical weapons. The new US CW production programme may have a similar effect.

International law may provide a second possible constraint on CW proliferation in the developing world. The 1925 Geneva Protocol bans the wartime use of chemical as well as biological weapons, but not the development, production, possession, or transfer of such weapons. Over 100 countries, many of whom are from the developing world, are parties to this agreement.[15] A number of Third World countries are also participating in negotiations in Geneva aimed at banning chemical weapons.

Both the Geneva Protocol and the longstanding effort to ban chemical weapons may have helped hinder Third World CW proliferation by underscoring that the use of such weapons was immoral and inhumane, by inspiring confidence that others were not acquiring chemical weapons, and by raising the political costs of pursuing a CW capability. But the international response to Iraq's repeated use of chemical weapons may have weakened the constraints on CW use embodied in international law and, by implication, on CW proliferation, as well. As was noted earlier, the UN confirmed in 1984 that chemical weapons were being used in the Gulf War. Not until 1986, however, did the UN officially identify Iraq as the guilty party. Baghdad's war effort, moreover, continued to receive support from the Soviet Bloc, France, China, and Egypt, all of whom provided substantial quantities of conventional arms to Iraq.[16]

In the past, technological barriers have served as a third constraint on the ability of Third World countries to develop chemical weapons. But these technological barriers have been gradually lowered as the industrialisation/modernisation process has brought petrochemical, pesticide, fertilizer, and pharmaceutical industries to the developing world. Any country with such industries has the potential, in terms of equipment, raw materials, and expertise, to produce some chemical warfare agents. Moreover, because much of the equipment and many of the chemicals that can be used to make chemical warfare agents have legitimate commercial uses, countries without such facilities can readily acquire the necessary components on the international market. Of course, technological barriers can be overcome most easily by the direct transfer of chemical weapons from a possessor state.

Third World countries may thus have both political and military incentives for acquiring chemical weapons, and may also face fewer moral, legal, and technical constraints on such acquisition than was previously the case. This does not mean, however, that all developing countries will necessarily acquire chemical weapons. For a majority of these states, the incentives to acquire CW either do not exist or are outweighed by existing constraints, however weakened the latter may have become. Only in a relatively limited number of Third World countries, therefore, has the combination of strong incentives and diminishing constraints appeared to produce a decision to acquire chemical weapons. These countries are considered below.

THE EXTENT OF THE CW PROLIFERATION PROBLEM

Any effort to explore the nature and extent of the CW proliferation problem in the develping world is hampered by the reluctance of most governments to identify specific chemical weapons states. Instead, government officials speaking on the record have tended to characterise the problem in terms of the *number* of such states. However, even these numerical estimates are imprecise and somewhat contradictory.

In June 1987, the head of the Soviet delegation to the Conference on Disarmament suggested that there were between nine and 15 countries with chemical weapons. One year earlier, the official Soviet news agency, TASS, reported that 13 to 15 countries had chemical weapons.[17] In the United Kingdom, on the other hand, government ministers stated in 1986 that possibly more than 20 countries either had chemical weapons or were considering acquiring them. In 1985, a government minister told the House of Lords that more than 12 states were believed to possess chemical weapons, compared to about six a decade earlier.[18] In the United States, the Director of the Arms Control and Disarmament Agency stated in 1987 that at least 15 states possessed chemical weapons, with others attempting to acquire them.[19] One year earlier, the US Army Chief of Staff and an official in the Office of the Secretary of Defense offered differing estimates: the former referred to 14 chemical weapons states with two others possible; the latter stated that 16 countries had chemical weapons, and six more were probable.[20] All of these estimates are believed to include both Third World countries and members of NATO and the Warsaw Pact.[21]

In addition to being imprecise and somewhat contradictory, official government statements generally do not explain how they *define* a chemical weapons state.[22] Do they distinguish, for example, between countries with chemical weapons research programmes and those with a militarily useful chemical weapons capability? If so, what *is* a military useful CW capability? Does it involve access to a certain quantity of chemical weapons, or of certain chemical agents? Finally, do official statements distinguish between those countries with chemical weapons under national control, and those with foreign chemical weapons deployed on their territory?

One possible reason why most governments do not identify CW possessor states and are not more specific in discussing capabilities is because they may be uncertain about precisely who does in fact have what capability. As was noted earlier, any country with a commercial chemical industry has the ability to produce some chemical warfare agents. Moreover, without direct access to such facilities, it is probably impossible to know whether activities being undertaken are of a commercial or military nature. Equipment and chemical feedstock purchases on the international market may not reveal much either, as they could either be for commercial or military purposes. Finally, even chemical delivery systems don't have distinctive features. An artillery shell, bomb, or missile warhead carrying a chemical warfare agent looks essentially the same as one carrying conventional high explosives.

Despite these difficulties, it is possible to explore the nature and extent of the Third World CW proliferation problem using publicly available information. In the discussion which follows, this information is organised according to specific criteria. It should be emphasised, however, that these criteria are merely a tool for organising the available information on CW proliferation, and that conclusions derived from them about the CW status of particular countries are based largely on this information. The criteria used in this discussion are as follows:

☐ *Known* CW states are those who have either declared that they possess chemical weapons or whose use of such weapons has been definitively confirmed.

☐ *Probable* CW states are those reported by NATO or Western government officials, on or off the record, as producing chemical weapons, possessing chemical weapons under national control, or using chemical weapons.

☐ *Seeking to possess* CW states are those reported by NATO or Western government officials, on or off the record, as trying to acquire chemical weapons.

☐ *Doubtful* CW states are those reported, generally by domestic or foreign adversaries, as possessing CW under national control or of using chemical weapons, with no confirmation by NATO or Western government officials.

On the basis of these criteria, Iraq is the only Third World country known to possess chemical weapons.[23] Eleven other Third World countries are probable CW states. The CW capabilities of seven of these countries have been mentioned in press reports citing US government officials speaking on the record. They include Burma,[24] China,[25] Iran,[26] North Korea,[27] Syria,[28] Taiwan,[29] and Vietnam.[30] The four remaining countries, Egypt,[31] Ethiopia,[32] Israel,[33] and Libya,[34] have been discussed in press reports citing unnamed US government officials and classified documents. South Korea has been identified by unnamed US government officials as a country seeking to possess chemical weapons.[35]

At least 18 other countries have been accused of either possessing or using chemical weapons, but there has been no confirmation of these claims, either on or off the record, by NATO or Western government officials. These doubtful chemical weapons states include Afghanistan,[36] Angola,[37] Argentina,[38] Chad,[39] Chile,[40] Cuba,[41] El Salvador,[42] Guatemala,[43] India,[44] Indonesia,[45] Laos,[46] Mozambique,[47] Nicaragua,[48] Pakistan,[49] Peru,[50] the Philippines,[51] South Africa,[52] and Thailand.[53]

It is difficult to know with any certainty why Iraq, the 11 probable CW states, and South Korea might have decided to acquire chemical weapons. Nevertheless, it is possible to draw some conclusions, however tentative, about the role of political and military incentives in the CW policy decisions of these countries based on publicly available information.

It would appear that none of these Third World countries acquired chemical weapons for reasons of political prestige. In order for chemical weapons to have *political* value as the "poor man's weapon of mass destruction", possessor status would have to be known *and* acknowledged by the country concerned. Yet even Iraq did not openly acknowledge its CW activities until July 1988.[54] Indeed, many Third World countries have emphasised just the opposite—that they do not possess chemical weapons. Among the probable CW states that have denied possession, are Burma, China, Egypt, Ethiopia, and Israel. Doubtful CW states that have denied possession include India, Indonesia, Pakistan, Peru, and the Philippines. This suggests that chemical weapons do not have the same sort of prestige value as nuclear weapons, and that decisions in the Third World to acquire chemical weapons are based largely on military rather than political incentives.

As noted earlier, Third World countries may view the military utility of chemical weapons differently than Western states. In at least five countries, chemical weapons may have been acquired for use in counter insurgency operations in their own or neighbouring states. Iraq's initial decision to obtain chemical weapons may have been related to its long history of problems with its Kurdish population. Burma is said to have acquired chemical weapons to quell domestic insurgents.[55] Egypt used chemical weapons during its intervention in the civil war in Yemen in the 1960s.[56] Ethiopia has had a longstanding problem with Eritrean secessionists. Finally, Vietnam has been accused by the US of using the so-called yellow rain mycotoxins and other unidentified chemical agents against the Hmong in neighbouring Laos and against resistance forces in Kampuchea.[57]

Third World countries facing superior conventional forces also have a powerful incentive for acquiring chemical weapons. Iraq's more recent chemical weapons programme is clearly a response to the Iranian human wave attacks in the Gulf War. The Egyptian and Syrian CW efforts may be related to Israel's conventional superiority, particularly its highly effective air force. Ethiopia may value chemical weapons for use in its longstanding conflict with Somalia over the Ogaden. Libya is reported to have acquired and used chemical weapons in its war with neighbouring Chad.[58] North Korea may have obtained chemical weapons for use against South Korean and US conventional forces. Taiwan's chemical weapons are reportedly designed to thwart an invasion from mainland China.[59] Finally, Vietnam is reported to have used chemical weapons in 1979 against Chinese intervention forces.[60]

At least four countries in the Third World may have acquired chemical weapons in order to deter enemy chemical use through the threat of retaliation in kind. Reports that China suffered chemical attacks during border skirmishes with the Soviet Union in 1969 and during its intervention in Vietnam in 1979 suggest a strong motive for a Chinese CW programme.[61] Iran has almost certainly acquired chemical weapons in response to Iraqi CW use in the Gulf War. Israel is reported to have obtained chemical weapons in the 1970s in response to the CW threat from its Arab neighbours, particularly Egypt.[62] South Korea's efforts to acquire chemical weapons are probably linked to the CW programme of its chief rival, North Korea.

Finally, at least some Third World countries may have acquired chemical weapons in order to counter an adversary's nuclear capability. Israel's alleged nuclear programme, for example, may have stimulated the CW efforts of a number of Arab countries, including Iraq, Egypt, and Syria.[63]

Iraq, South Korea, and the 11 probable CW states may thus have had a variety of military incentives for acquiring chemical weapons. These military incentives probably outweighed existing moral and legal constraints on CW proliferation which, as was suggested earlier, may have weakened in recent years. Third World CW armament programmes probably have been helped even more by the erosion of technological barriers to CW acquisition.

As was noted earlier, Third World countries interested in acquiring chemical weapons can either bypass the technological problems altogether by procuring such weapons from other CW states, or can seek to develop their own chemical weapons production capability by purchasing the necessary equipment and chemicals on the international market. US intelligence officials have acknowledged the role of commercial firms in Third World CW programmes.[64] But the United States has often emphasised the former route to proliferation, identifying Soviet training, technical assistance, and chemical weapons transfers to allies in the developing world as a key factor in the proliferation problem. In 1984, for example, columnist Jack Anderson reported that the CIA had concluded that "Soviet military assistance has been a common source and major stimulus to the momentum of chemical weapons proliferation in the Third World".[65] General Secretary Gorbachev has denied the US charges, stating that the Soviet Union has not transferred chemical weapons to anyone, has not deployed them in the territory of other states, and "has always strictly abided by those principles in its practical policies".[66]

Information attributed to Western government officials suggests that Iraq, South Korea, and the 11 probable CW states may have benefited from both Soviet and commercial assistance. The Soviet role has almost certainly been overstated, however, as indigenous production programmes, relying largely on equipment and chemicals purchased from Western firms, have been reported for a majority of these states.

Five Third World countries may have previously received chemical weapons directly from the Soviet Union. These include Egypt,[67] Ethiopia,[68] Libya,[69] Syria[70] and Vietnam[71]. Chemical weapons and technical assistance may also have been provided by one Third World country to another. Syria is reported to have helped the Iranian CW effort,[72] Iran is said to have supplied chemical weapons to Libya in return for Soviet-made mines,[73] while Israel is reported to have provided chemical agents to Taiwan, and advice on CW matters to the Chinese.[74] A majority of these countries, however, are now said to possess indigenous chemical weapons production capabilities, often developed with equipment and chemicals purchased from Western companies. These include Iraq,[75] Burma,[76] China,[77] Iran,[78] Israel,[79] Libya,[80] North Korea,[81] Syria,[82] Taiwan,[83] and Vietnam[84]. Egypt may also have its own CW production capability.[85]

A number of conclusions emerge from this discussion of publicly available information on CW proliferation in the developing world. First, Iraq is the only known CW state, although 11 other countries are probable CW states, and South Korea might be seeking to possess chemical weapons. The CW status of 18 other countries is doubtful. Second, Third World countries that may have acquired chemical weapons have done so largely for military rather than political reasons. Finally, a majority of the countries that are reported to have acquired chemical weapons appear to have done so through indigenous production programmes based on equipment and chemicals purchased from Western companies. The Soviet role in the Third World proliferation problem has thus almost surely been overstated.

These conclusions, it must be acknowledged, are derived from criteria that are far from ideal. Laos, for example, has been accused by the US government of using yellow rain and other unidentified chemical agents. However, because the reports of yellow rain warfare have been shown to be unreliable,[86] Laos has been classified here as a doubtful, rather than a probable, CW state. In addition, particular emphasis has been given to reports involving NATO and Western government officials, speaking on or off the record, and to reports said to be based on classified information. If these reports are incorrect, the conclusions, derived from them will be similarly flawed.

The problem of credible sources is not necessarily helped by multiple press reports containing the same basic information. Two of the most detailed accounts of the proliferation problem, by Oberdorfer and Ember, draw heavily from an earlier report, by the columnist Jack Anderson, purportedly based on intelligence sources and classified documents. Other reports may also be derived from the same initial source or report, so the possibility of erroneous information being unintentionally perpetuated cannot be overlooked.

It is also possible that false or exaggerated reports of CW proliferation may be propagated intentionally.[87] CW possession or use charges can be useful for discrediting a domestic or foreign adversary. Many of the claims concerning doubtful CW states probably fall in this category. CW proliferation fears can also help increase demand for chemical protective equipment. Finally, concern about CW proliferation can be used to increase support for national CW armament programmes.

Without access to intelligence information, it is impossible to know exactly how extensive the CW proliferation problem in the developing world really is. Moreover, judging from the official government statements noted earlier, even with access to intelligence information, it may still be impossible to know precisely who has what capability. In some respects, however, this may no longer matter. It is now widely believed that chemical weapons are spreading to more and more countries. This perception of a growing CW proliferation problem has been driving national as well as international policy.

National and International Responses

Evidence in 1984 that Iraq's chemical weapons had been produced with chemicals and equipment purchased from Western chemical companies stimulated both national and international efforts to control the sale of the relevant chemicals and technology. In March 1984, the United States banned the sale to both Iraq and Iran of five chemicals that could be used to manufacture mustard and nerve gases.[88] Two years later, the United States extended its list of controlled chemicals and added Syria to the ban, following reports that Syria had begun to produce chemical weapons and had discussed cooperation in the field with Iran.[89] In 1987, the United States added an additional eight chemicals to its export control list for Iraq, Iran and Syria, in response to information that these countries had altered their purchasing policies to evade existing controls. At the same time, the US extended its 1984 export control list to all but 18 Western industrialised countries, out of concern about the wider proliferation problem.[90]

Other governments, including those of Australia, Canada, Japan, the Netherlands, Denmark, the Republic of Ireland and the United Kingdom also imposed export controls on a variety of different chemicals in the spring and summer of 1984.[91] The Federal Republic of Germany also adopted chemical export controls in the spring of 1984 and, a few months later, placed controls on a wide range of equipment that could be used to produce chemical weapons, following reports linking a West German built pesticide plant to Iraqi efforts to produce nerve agents.[92] Chemical export controls were also approved by the European Community in 1984, thus providing the first multilateral response to the problem of CW proliferation.[93] In January 1986, the Soviet Union imposed export controls on nine chemicals and one chemical group that could be used to make chemical warfare agents.[94] Relevant members of the Council for Mutual Economic Assistance (CMEA) are reported to have met in June 1987 to discuss similar steps.[95]

One glaring weakness in these early national non-proliferation efforts was that countries tended to include different chemicals in their export control lists. In March 1985, the US Secretary of State, George Shultz, called for multilateral as well as bilateral efforts to curb exports of chemicals that could be used to make chemical weapons.[96] A few months later, Australia took the lead in coordinating national export control policies, hosting the first in a series of meetings of Western industrialised states.[97]

At its first meeting in June 1985, the so-called Australian Group included the 10 member states of the European Community, plus Australia, Canada, Japan, New Zealand, and the United States.[98] By September 1987, its membership had grown to 20, the newcomers being Portugal, Spain, Norway, Switzerland, and the European Commission itself. Perhaps more importantly, the Group had succeeded in developing a uniform list of chemicals to be controlled by all member states. Formal export licences are now required for eight specific chemicals, and a warning list of over 30 other chemicals has been circulated to private chemical companies in the hope that they will cooperate with government agencies in controlling the sale of these substances.[99]

In the autumn of 1985, the Soviet Union began to express an interest in working with the United States to halt the spread of chemical weapons.[100] This culminated in a promise, at the Reagan–Gorbachev summit in November 1985, that the two sides would "initiate a dialogue on preventing the proliferation of chemical weapons".[101] US officials hoped that this dialogue would lead to a cooperative relationship similar to the longstanding US–Soviet effort to prevent nuclear proliferation. In early 1986, Kenneth Adelman, the Director of the US Arms Control and Disarmament Agency, suggested that the two sides should harmonise export controls on chemicals and equipment to problem countries in the Third World, as well as share intelligence information on such countries.[102]

At least initially, the Soviet Union was interested in a much more specific bilateral effort. Shortly before the November 1985 Reagan–Gorbachev summit, the General Secretary advanced the "thought" that the two sides could develop a treaty to curb the spread of chemical weapons, just as they had concluded a treaty to halt the spread of nuclear weapons.[103] A few months later, in a major foreign policy address, Gorbachev proposed the idea of a chemical non-proliferation treaty as an interim step prior to the conclusion of a chemical weapons ban.[104] The United States rejected the Soviet proposal, arguing that the most effective means of halting CW proliferation was by concluding a ban on such weapons. As the US State Department spokesman, Bernard Kalb, explained,

> We believe that an effective and verifiable global ban on all chemical weapons is the way to solve the triple problems of existing chemical weapons capabilities, their use, and their further spread.[105]

A chemical non-proliferation treaty probably was not, therefore, on the agenda of the US–Soviet CW non-proliferation discussions held in 1986 and 1987. Whether the two sides achieved progress in the areas suggested earlier by the United States is not publicly known.[106]

Neither the chemical export controls promoted largely by Western industrialised states nor the chemical non-proliferation treaty suggested by the Soviet Union provide a solution to the problem of chemical weapons proliferation in the developing world. Export control policies will not prevent countries that already possess civil chemical industries from developing at least some chemical warfare agents. Moreover, it is impossible to control all of the chemicals that could be used to produce chemical warfare agents, as many have legitimate commercial uses. Finally, a determined state may be able to evade export controls entirely, either by setting up front companies, or by dealing with unscrupulous chemical traders or manufacturers.[107] Chemical export controls will not, therefore, prevent a country that really wants chemical weapons from acquiring them. At best, export controls will make it more difficult and costly for the potential proliferator to acquire chemical weapons, and may provide supplier countries with early warning of such proliferation. Or as a US government official acknowledged in 1984, chemical export controls

> can achieve valuable objectives, such as the disruption of a given state's plans to produce CW quickly for immediate use in battle and the imposition of higher economic costs on such a state. But no export control policy can erect an insurmountable barrier against acquisition or at-home production of CW.[108]

Verification and, more importantly, political obstacles rule out a chemical non-proliferation treaty as a solution to the problem of CW proliferation. Developing countries oppose the creation of another discriminatory, Nuclear Non-proliferation Treaty type of arrangement, which would allow existing members of the chemical club to retain their chemical weapons, but would prohibit the "have-nots" from acquiring them. Western countries view efforts to conclude such an agreement as a distraction from the negotiations in Geneva aimed at banning chemical weapons. As the US Ambassador to the Geneva negotiations, Donald Lowitz, explained in 1986: "the focus of our efforts is and must remain a comprehensive agreement that eliminates forever the scourge of these terrible weapons".[109] A West German official agreed, noting that "[p]roliferation will be halted when countries can verify and control the global production of chemical weapons".[110]

Third World countries may be reluctant, however, to abandon their chemical weapons capabilities and participate in a CW disarmament agreement if security corners have prompted them to acquire chemical weapons. As the British Foreign Secretary, Sir Geoffrey Howe, told the third UN special session on disarmament in June 1988,

> disarmament cannot proceed in a vacuum . . . It is inextricably tied up with security. No one is going to discuss disarmament seriously if he already feels insecure.[111]

Third World countries that have acquired CW must therefore be convinced that their security interests can be met by means other than chemical weapons.

CONCLUSIONS/IMPLICATIONS

In the absence of a chemical weapons ban encompassing all CW states, the proliferation of chemical weapons, particularly in the developing world, is likely to have profound implications. As chemical weapons become more fashionable, various sub-national groups, including terrorist organisations, may become more interested in acquiring a CW capability.[112] With a basic knowledge of chemistry and a small amount of money, such groups can easily produce enough chemical agent to threaten an average-size city. Research quantities of ready made agents such as mustard gas can also be purchased directly from some chemical manufacturers.[113] Opportunities to steal chemical weapons may also increase as more and more countries acquire them. Finally, sub-national groups might also obtain chemical weapons directly from states such as Libya and Iran who are sympathetic to their political aspirations.

At the national level, the spread of chemical weapons may lead to further proliferation in three ways. First, non-CW states may move to acquire chemical weapons in response to the CW threat posed by neighbouring states. In addition, chemical weapons may increasingly be seen as a legitimate means of countering conventional military threats, either domestic or foreign. Finally, proliferation may lead to chemical weapons being transferred more freely between states, and hence to further proliferation.

CW proliferation could also make conflict itself more likely, particularly in unstable regions. Following confirmation of Iraq's use of chemical weapons in the Gulf War, there were reports that the United States had examined the feasibility of air strikes against Iraqi CW sites.[114] More recently, Israel was reported to be considering a pre-emptive strike against a Syrian installation said to be developing nerve agent warheads for SS–21 and SCUD missiles.[115] Either of these strikes could have led to a military confrontation between the countries involved.

CW proliferation could also make conflict more destructive, particularly in areas such as the Middle East and Asia, where ballistic missiles are also proliferating. During the Gulf War, Iraq and Iran used conventionally armed missiles in their attacks on each other's cities. In the final months of the war, however, Iraq reportedly threatened to launch chemical strikes against large Iranian cities.[116] At least seven other probable CW states also possess ballistic missiles which could be modified to carry chemical warheads, including China, Egypt, Israel, Libya, North Korea, Syria, and Taiwan. South Korea also has a conventional ballistic missile capability.[117] The use of chemically armed ballistic missiles by any of these countries would lead to unprecedented destruction. Moreover, if chemically armed ballistic missiles were used against Israel, it would almost certainly trigger a nuclear response.

The proliferation of chemical weapons, and of sophisticated delivery means such as ballistic missiles, also has implications for the Superpowers themselves. With such military power in the hands of Third World countries, both the United States and the Soviet Union will find it increasingly difficult to pursue their regional interests. Moreover, the use of chemically armed ballistic missiles in a region like the Middle East could draw the Superpowers in on the side of their respective allies, culminating in conflict between East and West as well.[118]

The West, thus, has a clear interest in halting the spread of chemical weapons in the developing world. Although the identities and capabilities of CW possessor states may still be unclear, Iraq's acquisition and repeated use of chemical weapons provides firm evidence of a Third World CW proliferation problem. Chemical export controls are of limited value in preventing developing countries from acquiring indigenous CW production capabilities. A ban on chemical weapons could go a long way toward solving the proliferation problem, but only if all existing CW states can be convinced that their security interests can be met by means other than chemical weapons. If countries like Iraq refuse to participate in the chemical weapons ban, the treaty's non-proliferation objectives will not be realised, and other countries may not agree to ratification. CW proliferation in the developing world may thus make the elimination of chemical weapons both more urgent and, at the same time, more difficult to achieve.

NOTES

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[1] For the various UN Security Council reports investigating the use of chemical weapons in the Gulf War, see S/16433 of 26 March 1984, S/17911 of 12 March 1986, and S/18852 of 8 May 1987, S/19823 of 25 April 1988, S/20060 of 20 July 1988 and S/20063 of 25 July 1988.

[2] John H. Cushman, Jr., "US Suspects Toxic Arms Development," *International Herald Tribune*, 5 May 1988.

[3] See, for example, Geoffrey Kemp, "Mideast Missile Madness: A Bazaar for Doomsday," *Washington Post*, 27 March 1988; and David Ottaway, "In Mideast, Warfare Takes a New Turn," *Washington Post*, 5 April 1988.

[4] US Senate, Committee on Foreign Relations and Subcommittee on Energy, Nuclear Proliferation and Government Processes of the Committee on Governmental Affairs, *Joint Hearing on Chemical Warfare: Arms Control and Nonproliferation*, 98th Cong., 2nd Sess. Washington, DC, US Government Printing Office, 1984, p. 34.

[5] See, for example, J.P. Perry Robinson, "Some Developments Over the Past Year in the Field of Chemical Warfare Armament," Appendix to Background Paper No. 7, 13th Workshop of the Pugwash Study Group on Chemical Warfare, Monitoring a Chemical Weapons Treaty, Geneva, Switzerland, 23–24 January 1988.

[6] Many of the ideas reflected here are drawn from US House of Representatives, Subcommittee on International Security and Scientific Affairs of the Committee on Foreign Affairs, *Report on Binary Weapons: Implications of the US Chemical Stockpile Modernisation Program for Chemical Weapons Proliferation*, 98th Cong., 2nd Sess. Washington, DC: US Government Printing Office, 1984, pp. 18–27.

[7] As cited in Margaret Gowing, *Independence and Deterrence: Britain and Atomic Energy, 1945–52 Volume I Policy Making*, London, Macmillan, 1974, p. 407.

[8] As cited in William E. Smith, "Clouds of Desperation," *Time*, 19 March 1984, p. 6.

[9] Stockholm International Peace Research Institute, *World Armaments and Disarmament, SIPRI Yearbook 1982* London: Taylor & Francis Ltd., 1982, p. 336 (hereafter cited as *SIPRI Yearbook*, with appropriate year). See also, Stockholm International Peace Research Institute, *The Problem of Chemical and Biological Warfare, Vol. I, The Rise of CB Weapons*, Stockholm, Almqvist & Wiksell, 1971, pp. 142–52, 159–61.

[10] As cited in Dr. A.J.J. Ooms, "What makes chemical weapons so peculiar?" in *The Holmenkollen Report on the Chemical Weapons Convention*, Oslo, Royal Norwegian Ministry of Foreign Affairs, 1987, p. 32.

[11] As cited in A. Jack Ooms, "Chemical Weapons: Is Revulsion a Safeguard?" *Atlantic Community Quarterly*, Vol. 24, No. 2, Summer 1986, p. 157.

[12] These figures are drawn from SIPRI, *The Problem of Chemical and Biological Warfare, Vol. I, The Rise of CB Weapons*, pp.128–29.

[13] US House of Representatives, Special Subcommittee on Arms Control and Disarmament of the Committee on Armed Services, *Hearings on the Review of Arms Control and Disarmament Activities*, 93rd Cong., 2nd Sess. Washington, DC, US Government Printing Office, 1974, p. 9.

[14] For the Gorbachev statement, see "Speech by Mikhail Gorbachev at Friendship Rally," Soviet TV, 10 April 1987 as reprinted in SWB–EE/8541, 13 April 1987. For a US view on the Soviet programme, see US Defense Intelligence Agency, Directorate for Scientific and Technical Intelligence, *Soviet Chemical Weapons Threat*, Washington, DC, Defense Intelligence Agency, 1985 DST–1620F–051–85, p. 9.

[15] The text and list of Parties to the Geneva Protocol may be found in US Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements*, Washington, DC, Arms Control and Disarmament Agency, 1982, pp. 14–18.

[16] See, Anthony H. Cordesman, *The Impact of Arms Transfers on the Iran/Iraq War*, Whitehall Paper London, Royal United Services Institute for Defence Studies, 1987, pp. 6, 12, 17.

[17] "Nazarkin Views Chemical Weapons Convention Prospects," *Komsomolskaya Pravda*, (in Russian) 16 June 1987 as reprinted in FBIS–SU, 22 June 1987; and "US Role in Chemical Weapons Ban Reviewed," *Tass*, (in English) 9 April 1986 as reprinted in FBIS–SU, April 1986.

[18] "Speech by Mr Tim Renton MP, Minister of State for Foreign and Commonwealth Affairs of the United Kingdom of Great Britain and Northern Ireland to the Conference on Disarmament," 15 July 1986; Hansard (Commons), 16 December 1986, col 500; and Hansard (Lords) 24 April 1985, col 1178.

[19] Kenneth L. Adelman, "USA's Need for a Chemical Deterrent," ACDA Occasional Papers, Number 2, 11 February 1987, p. 1.

[20] US House of Representatives, Subcommittee on Defense of the Committee on Appropriations, *Hearings on Department of Defense Appropriations for 1987*, 99th Cong., 2nd Sess., Washington, DC, US Government Printing Office, 1986, Part 1, p. 114; and US Senate, Subcommittee on Strategic and Theater Nuclear Forces of the Committee on Armed Forces, *Hearings on the Department of Defense Authorization for Appropriations for Fiscal Year 1987*, 99th Cong., 2nd Sess., Washington, DC, US Government Printing Office, 1986, Part 4, p.1730.

[21] Within the two military alliances, the United States, the Soviet Union, and France are known CW states. Czechoslovakia, the German Democratic Republic, Romania, and Poland can be classified as probable CW states, on the basis of press reports citing unnamed NATO and Western government officials. See, Don Oberdorfer, "Chemical Arms Curbs Are Sought," *Washington Post*, 9 September 1985; "Welt Am Sonntag Says Warsaw Pact States Producing Poison Gas," *Radio Free Europe*, 2 March 1986; and Robert C. Toth, "Germ, Chemical Arms Reported Proliferating," *Los Angeles Times*, 27 May 1986. See also Karl Feldmeyer, "Der Warschauer Pakt übt mit scharfer chemischer Munition," *Frankfurter Allgemeine Zeitung*, 19 August 1985, and "CDU/CSU Spokesman on USSR Chemical Weapons," Hamburg *DPA*, (in German) 12 August 1985 as reprinted in FBIS–WE, August 1985.

[22] One notable exception may be found in a 1986 interview with Kenneth Adelman, the Director of the US Arms Control and Disarmament Agency. Adelman said that stockpile size is "sufficient so that it could give a military utility to the possessing country, and sufficient to cause a great deal of damage to the other side. We are not talking about experimental possession, research possession." He also said that in the main, Third World countries have purchased rather than produced chemical weapons, and that the most widely possessed agent was mustard gas, although nerve gas and incapacitants were also stockpiled. See, Lois Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," *Chemical and Engineering News*, 14 April 1986, p. 13.

[23] Robert J. McCartney, "Iraqi Official Acknowledges Chemical–Arms Use in War," *International Herald Tribune*, 2–3 July 1988; and "US Says Iraq Uses Chemical Weapons in War with Iran," *International Herald Tribune*, 6 March 1984.

[24] "Statement by Rear Admiral William O. Studeman, US Navy, Director of Naval Intelligence, before the Seapower and Strategic and Critical Materials Subcommittee of the House Armed Services Committee, on Intelligence Issues," 1 March 1988, p. 48. For other reports based on information from US government sources, see Oberdorfer, "Chemical Arms Curbs Are Sought"; and Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," p. 9.

[25] Studeman Statement, 1 March 1988, p. 48. For other reports based on information from US government sources, see "China and Israel," *Foreign Report*, 19 July 1984; and Jack Anderson, "The Growing Chemical Club," *Washington Post*, 26 August 1984.

[26] "US Says Iran May Use Chemical Arms," *International Herald Tribune*, 26 April 1985; Tom Diaz, "Syria said to have offered chemical weapons to Iran," *Washington Times*, 9 December 1985; and William Beecher, "US seeking action to halt chemical arms spread," *Boston Globe*, 4 February 1986.

[27] Studeman Statement, 1 March 1988, p. 48. See also the comments by US Secretary of Defense Caspar Weinberger in Rick Atkinson, "Weinberger Maintains Opposition to Dutch Plan for Cruise Missiles," the *Washington Post*, 13 May 1984, and the testimony of the US Army Chief of Staff General John A. Wickham, Jr., in US House of Representatives, Subcommittee on Defense of the Committee on Appropriations, *Hearings on Department of Defense Appropriations for 1986*, 99th Cong., 1st Sess., Washington, DC, US Government Office, 1985, Part 2, p. 85. For a later report on what was said to be secret testimony to the Congress by General Wickham, see Chuck Vinch, "US: N. Korea has chemical arms," *Pacific Stars & Stripes*, 30 June 1986.

[28] Diaz, "Syria said to have offered chemical weapons to Iran." For other reports based on information from US government sources, see Oberdorfer, "Chemical Arms Curbs Are Sought"; and Gaylord Shaw, "Syria Reported to be Making Chemical Arms," *Los Angeles Times*, 28 March 1986.

[29] Studeman Statement, 1 March 1988, p. 48. For other reports based on information from US

government sources, see "China and Israel"; and Oberdorfer, "Chemical Arms Curbs Are Sought."

[30] US Department of State, "Chemical Warfare in Southeast Asia and Afghanistan," Report to the Congress from Secretary of State Alexander M. Haig, Jr., 22 March 1982, Special Report No. 98 (hereafter cited as *The Haig Report*); and US Department of State, "Chemical Warfare in Southeast Asia and Afghanistan: An Update," Report from Secretary of State George P. Shultz, November 1982, Special Report No. 104 (hereafter cited as *The Shultz Report*).

[31] Richard Halloran, "US Finds 14 Nations Now have Chemical Arms," *New York Times*, 20 May 1984; and Anderson, "The Growing Chemical Club".

[32] Anderson, "The Growing Chemical Club"; and Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," p. 9.

[33] "China and Israel"; and Anderson, "The Growing Chemical Club".

[34] Michael Gordon, "US and Soviet to Meet Again on Curbing Chemical Weapons," *New York Times*, 26 August 1986; and Elaine Sciolino, "US Sends 2,000 Gas Masks to the Chadians," *New York Times*, 25 September 1987.

[35] Oberdorfer, "Chemical Arms Curbs Are Sought"; and Ember, "Worldwide Spread of Chemical Weapons Receiving Increased Attention," p. 9.

[36] The Haig Report refers to "*some evidence* that Afghan Government forces *may* have used Soviet supplied chemical weapons against the *mujahidin* even before the Soviet invasion." Emphasis added. *The Haig Report*, p. 6.

[37] Paul Moorcroft, "A new heart for the UNITA army," *Jane's Defence Weekly*, 13 September 1986; and James Morrison, "Angola again tied to use of nerve gas," *Washington Times*, 11 March 1988.

[38] "Argentine 'Gas Shells' Found in Falklands," *Daily Telegraph*, 18 August 1982.

[39] *TASS*, 21 April 1986, as reported in FBIS—SU, 25 April 1986, cited in *Arms Control Reporter, 1986*, p. 704.B.172.

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[41] David Wood, "Nicaragua has gear for waging chemical war, Pentagon says," *New Orleans Times–Picayune*, 5 December 1984.

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[43] Havana international radio, 6 July 1982, cited in *SIPRI Yearbook 1987*, p. 111 and note 36.

[44] Pierre Simonitsch, "Chemical Weapons: everyone has stocks, despite treaty," *Frankfurter Rundschau*, 29 August 1982 as reprinted in *The German Tribune*, 12 September 1982.

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[47] James Morrison, "Mozambique accused of chemical warfare," *Washington Times*, 31 December 1986.

[48] Wood, "Nicaragua has gear for waging chemical war, Pentagon says"; and *ACAN*, [illegible] February 1986 as reported in FBIS–LA, 18 February 1986, cited in *Arms Control Reporter, 1986*, p. 704.B.167.

[49] Jack Anderson, "Powderkeg fuse on our planet burning shorter," *Washington Post*, 3 December 1981, and "Phnom Penh says US gives Asian allies chemical weapons," *New York Times*, 14 April 1982, cited in *SIPRI Yearbook 1983*, p. 407 and note 164.

[50] H.G. Brauch, "Chemical Weapons: arsenals and recent developments," a paper presented at the Conference on Non Nuclear War in Europe, Groningen, 28 Nov–1 Dec 1984, cited in *SIPRI Yearbook 1987*, p. 111 and note 33.

[51] R. Dalton, "Manilla investigation into napalm bombing claim," *Times*, 26 September 1984, cited in *SIPRI Yearbook 1987*, p. 113 and note 39.

[52] UNHCR/WHO investigatory report, 1 June 1978 in UN Security Council document *S/13473*, 27 July 1979, cited in *SIPRI Yearbook 1987*, p. 111 and note 41; and Johannesburg *SAPA*, 3 September 1986 as reported in FBIS–ME, 4 September 1986, cited in *Arms Control Reporter, 1986*, p. 704.B.200.

[53] "Phnom Penh says US gives Asian allies chemical weapons," cited in *SIPRI Yearbook 1983*, p. 407 and note 164; and Kampuchean news agency statement as reported in FBIS–AP, 25 February 1985, cited in *Arms Control Reporter, 1985*, pp. 704.B.117–18.

[54] McCartney, "Iraqi Official Acknowledges Chemical–Arms Use in War." Two months earlier, the Iraqi Foreign Minister had warned publicly that Iraq had to repel aggression by "all means, including the use of chemical weapons, against those who seek to occupy its territory." Patrick Tyler, "Iraq Seems to Abandon Diplomacy for Missiles," *International Herald Tribune*, 12 May 1988.

[55] Oberdorfer, "Chemical Arms Curbs Are Sought".

[56] M. Meselson and D.E. Viney, "The Yemen," in Steven Rose, ed., *CBW: Chemical and Biological Warfare*, Boston, Beacon Press, 1969, pp. 99–102; and "China and Israel."

[57] *The Haig Report*; and *The Shultz Report*.

[58] Sciolino, "US Sends 2,000 Gas Masks to the Chadians"; and Michael Gordon, "US Thinks Libya May Plan to Make Chemical Weapons," *New York Times*, 24 December 1987.

[59] "China and Israel"; and Anderson, "The Growing Chemical Club."

[60] "China and Israel"; and Anderson, "The Growing Chemical Club."

[61] "China and Israel"; and Anderson, "The Growing Chemical Club".

[62] "China and Israel"; and Anderson, "The Growing Chemical Club".

[63] In this regard, see the comments by the former head of the Egyptian chemical warfare programme in "Arabs 'need chemical weapons,'" *Independent*, 28 July 1988.

[64] Tom Diaz, "Chemical weapons proliferation spurred by business, panel says," *Washington Times*, 10 May 1985; and Jack Anderson and Dale Van Atta, "Iran May Turn Chemical Tables on Iraq," *Washington Post*, 2 October 1985.

[65] Anderson, "The Growing Chemical Club".

[66] Soviet Embassy, Information Department, Press release, "Statement by Mikhail Gorbachev," Washington, 16 January 1986, p. 7.

[67] Anderson, "The Growing Chemical Club"; and "China and Israel".

[68] Anderson, "The Growing Chemical Club".

[69] Simon O'Dwyer-Russell, "Gaddafi arms Syria with gas warheads," *Sunday Telegraph*, 23 November 1986.

[70] Oberdorfer, "Chemical Arms Curbs Are Sought".

[71] *The Haig Report*; and *The Shultz Report*.

[72] Anderson and Van Atta, "Iran May Turn Chemical Tables on Iraq"; and Boucher, "US seeking action to halt chemical arms spread."

[73] Sciolino, "US Sends 2,000 Gas Masks to the Chadians."

[74] "China and Israel."

[75] William Greer, "US Stops Chemicals Shipment to Iraq," *International Herald Tribune*, 2 April 1984; and Robert Harris, "The poor man's atom bomb," *The Listener*, 30 October 1986.

[76] Studeman Statement, 1 March 1988, p. 48; Oberdorfer, "Chemical Arms Curbs Are Sought"; and E.A. Wayne, "Tracking chemical weapons in the Gulf War," *Christian Science Monitor*, 13 April 1988.

[77] Studeman Statement, 1 March 1988, p. 48; and Anderson, "The Growing Chemical Club".

[78] Diaz, "Syria said to have offered chemical weapons to Iran"; and Harvey Morris, "Iran military wants to use chemical arms," *Independent*, 27 December 1987.

[79] Oberdorfer, "Chemical Arms Curbs Are Sought"; and Harris, "The poor man's atom bomb".

[80] Gordon, "US and Soviet to Meet Again on Curbing Chemical Weapons." See also, Gordon, "US Thinks Libya May Plan to Make Chemical Weapons".

[81] Studeman Statement, 1 March 1988, p. 48; and Atkinson, "Weinberger Maintains Opposition to Dutch Plan for Cruise Missiles."

[82] Diaz, "Syria said to have offered chemical weapons to Iran"; and Shaw, "Syria Reported to Be Making Chemical Arms".

[83] Studeman Statement, 1 March 1988, p. 48; "China and Israel"; and Oberdorfer, "Chemical Arms Curbs Are Sought".

[84] Studeman Statement, 1 March 1988, p. 48.

[85] Israeli, rather than US, sources, have stated this. See, for example, "Analyst Warns of Chemical Weapons," *Near East Report*, 25 August 1986.

[86] See, Elisa D. Harris, "Sverdlovsk and Yellow Rain: Two Cases of Soviet Non-compliance?" *International Security*, Vol. 11, No. 4, 1987, pp 41–95.

[87] These ideas are drawn from Robinson, "Some Developments Over the Past Year in the Field of Chemical–Warfare Armament," p. 3.

[88] Don Oberdorfer, "US Curbs Chemicals to Iran, Iraq," *Washington Post*, 31 March 1984.

[89] Bernard Gwertzman, "US Includes Syria in Chemicals Ban," *New York Times*, 6 June 1986.
[90] "US tightens exports of warfare chemicals," *Chemical and Engineering News*, 10 August 1987.
[91] *SIPRI Yearbook 1985*, pp. 174–78.
[92] John Tagliabue, "Bonn Limits Export of Chemical–Arms Materials," *New York Times*, 8 August 1984.
[93] *SIPRI Yearbook 1985*, pp. 174–75. The countries involved included Belgium, Denmark, France, the Federal Republic of Germany, Greece, Italy, Luxembourg, the Netherlands, the Republic of Ireland, and the United Kingdom.
[94] *International Affairs* (Moscow), April 1986, pp. 151–62.
[95] *ADN*, 24 June 1987 as reported in FBIS–EE, 25 June 1987, cited in *Arms Control Reporter, 1987*, p. 704.B.231.
[96] Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," p. 11.
[97] Oberdorfer, "Chemical Arms Curbs Are Sought".
[98] Oberdorfer, "Chemical Arms Curbs Are Sought," and Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," p. 11.
[99] Robinson, "Some Developments Over the Past Year in the Field of Chemical–Warfare Armament," p. 7.
[100] Don Oberdorfer, "US Soviets May Meet Soon On Curbing Chemical Arms," *Washington Post*, 4 January 1988.
[101] "Text of the Joint US–Soviet Statement: 'Greater Understanding Achieved,'" *New York Times*, 22 November 1985.
[102] William Beecher, "US seeking action to halt chemical arms spread," *Boston Globe*, 4 February 1986.
[103] Leslie H. Gelb, "US–Soviet Pact on Chemical Arms Said to Be Near," *New York Times*, 12 November 1985.
[104] Soviet Embassy, "Statement by Mikhail Gorbachev," p. 7.
[105] "US rejects chemical weapons plan," *Boston Globe*, 11 February 1986. See also, Thomas W. Netter, "US Rebuffs Soviet on Chemical Arms," *New York Times*, 12 February 1986.
[106] A US Government Fact Sheet released at the end of 1987 simply stated that the two sides "have reviewed export controls and political steps to limit the spread and use of chemical weapons." US Information Service, "US Arms Control Initiatives (Text: US Government Fact Sheet)," London, 8 December 1987, p. 6.
[107] Iraq reportedly has used both these tactics. See, "A plague of 'hellish poison,'" *US News and World Report*, 26 October 1987; and Steven Dickman, "Nerve gas cloud hangs over West German firms," *Nature*, 14 April 1988, p. 573.
[108] US Senate, *Joint Hearing on Chemical Warfare*, p. 17.
[109] Thomas W. Netter, "US Rebuffs Soviet of Chemical Arms," *New York Times*, 12 February 1986.
[110] Ember, "Worldwide Spread of Chemical Arms Receiving Increased Attention," p. 12.
[111] United Kingdom Mission to the United Nations, "Speech by the Rt Hon Sir Geoffrey Howe QC MP at the Third Special Session of the United Nations General Assembly Devoted to Disarmament," 7 June 1988, p. 2.
[112] Some past reports on subnational proliferation problems may be found in *SIPRI Yearbook 1983*, p. 407; and US House of Representatives, *Report on Binary Weapons*, pp. 69–71.
[113] Gary Yerkey, "Experts study threat of chemical weapons in terrorists' hands," *Christian Science Monitor*, 29 August 1986.
[114] Seymour Hersh, "US Aides Say Iraqis Made Use of a Nerve Gas," *New York Times*, 30 March 1984; and Oberdorfer, "US Curbs Chemicals to Iran, Iraq."
[115] Marie Colvin and John Witherow, "Syrian nerve gas warheads alarm Israel," *Sunday Times*, 10 January 1988.
[116] "Iraq, Saying it Hit Tankers, Threatens Chemical Strikes," *International Herald Tribune*, 30 March 1988.
[117] Aaron Karp, "The frantic Third World quest for ballistic missiles," *Bulletin of Atomic Scientists*, June 1988, pp. 14–20.
[118] These concerns are clearly articulated in Francois Heisbourg, "Missiles: Steps That Might Check Proliferation," *International Herald Tribune*, 30 March 1988.

Senator **Sarbanes**. Mr. Dunn.

STATEMENT OF LEWIS A. DUNN, ASSISTANT VICE PRESIDENT, SCIENCE APPLICATIONS INTERNATIONAL CORP., FORMER ASSISTANT DIRECTOR, U.S. ARMS CONTROL AND DISARMAMENT AGENCY, McLEAN, VA

Mr. **Dunn**. Thank you, Mr. Chairman.

I am pleased to have this opportunity to testify before the Subcommittee.

Having testified in the past as an Administration witness, I look forward to doing so now as a private citizen.

As requested, I shall offer some brief summary remarks. My remarks draw on a more extensive analysis of chemical weapons arms control that I have recently published in "Survival," the Journal of the International Institute for Strategic Studies. I request that my article in "Survival" be included in the record along with these summary remarks as my written testimony.

Senator **Sarbanes**. They will be so included.

Mr. **Dunn**. In recent years responses to the growing threat of chemical weapons proliferation have moved ahead on several different fronts. Progress has been made in the multilateral negotiations at the Geneva Conference on Disarmament on a complete and total ban on the acquisition, production, stockpiling, transfer or use of chemical weapons.

Under the framework of the Australia Group, supplier countries have sought to tighten export controls on chemicals. But as last winter's controversy over assistance by West German firms to Libya's Rabta chemical weapons plant demonstrated, the results of these suppliers' efforts have sometimes been mixed. Indeed, only the glare of publicity and measures beyond "usual export controls" led the German Government to act.

Legislation has been introduced in both Houses of Congress to impose sanctions on firms that have assisted countries to acquire chemical weapons capabilities as well as on countries using these weapons.

During his election campaign last fall, President Bush declared, and I quote, "And if I'm elected President, if I'm remembered for anything, it would be this: a complete and total ban on chemical weapons." The Bush Administration and the U.S. Congress now face three difficult questions in dealing with the threat of chemical weapons proliferation.

First, should the United States in light of growing concerns about its effective verification retreat from the goal of a complete and total chemical weapons ban?

Second, assuming a decision to stick with that goal, which I support, what steps can now be taken and in the future to contain its risk?

Third, what measures can be adopted to strengthen international export controls in this field as well as to establish a presumption that chemical weapons users will pay a price?

In the context of this third question, I shall discuss the issue of sanctions adding some remarks to my summary testimony based upon the earlier exchanges.

Turning to the first question, verification is widely acknowledged to be the potential Achilles' heel of a complete and total chemical weapons ban. Even with extensive provisions for on-site inspection, uncertainties dominate the verification tally sheet.

In particular, monitoring civilian chemical industry facilities that use key precursor chemicals to detect misuse will be a demanding task. Detecting undeclared production of chemical weapons agents will be an even more formidable detection problem.

Mandatory short-notice inspection of suspect sites, what often is termed anywhere, anytime challenge inspection, offers at most a partial answer. It is highly unlikely that, barring a mistake by the violator, inspectors would be permitted to uncover illegal activities.

Estimates of the military significance of undetected cheating, whether by the Soviet Union or by a Third World country, vary significantly. They depend heavily on the extent of the activity, the specific military situation, and the defensive measures available to the other side. Such estimates should not be overstated.

Moreover, continued improvement in the East-West political relationship as well as a restructuring of Soviet conventional forces in Europe would reduce the risks to the United States of these verification uncertainties.

Nonetheless, faced with these verification uncertainties of a complete and total ban, there is support in some quarters for backing away from that goal. But all alternatives have important weaknesses, especially for efforts to prevent the proliferation of chemical weapons.

Most important, the verification uncertainties and potential risks of a complete and total ban must be weighed against the important benefits of such a ban for U.S. efforts to check the proliferation of chemical weapons to conflict-prone Third World regions.

Among those benefits are:

First, international agreement to a legally binding ban on chemical weapons development production, acquisition and use would most signal renewed global support for non-use of chemical weapons.

Second, successful negotiation and implementation of a complete and total ban, with widespread adherence, would go far to reverse the current perception that the increasingly widespread proliferation of chemical weapons is unavoidable. This would lessen pressures to acquire such weapons.

Third, legally binding obligations under a chemical weapons ban not to assist other countries to obtain chemical weapons would greatly assist our efforts to strengthen multilateral export controls and to ensure their effective implementation.

One clear lesson from over 15 years of nuclear export controls is that without such a legal foundation, U.S. and like-minded countries' attempts to strengthen export controls will face an uphill battle.

Fourth, though important, export control efforts by themselves can only buy time, slowing eventual acquisition of chemical weapons capabilities by Third World countries. This, too, is a lesson of nuclear export controls. A chemical weapons arms control treaty offers a longer-term political approach.

Fifth, a complete and total ban would provide the strongest political foundation for sanctions, economic, political and, if justified as a last resort, military either against holdout countries seeking to acquire chemical weapons or in response to their actual use.

Assuming pursuit of a complete and total ban, measures can be taken now and in the future to contain its risks. Safeguards might be pursued. U.S./Soviet confidence building measures could be pursued to place limits on defensive exercises that could be used to hide illegal offensive preparations.

Additional verification measures might be pursued with the Soviets. Consultations with the Soviet Union and U.S. allies also are warranted now on how to bring into a complete and total ban the key target countries in the Third World. Their adherence would be essential to realize fully its benefits.

In parallel with intensified activity on the negotiations front, other steps should be taken to counter chemical weapons proliferation in the Third World before a complete and total ban is concluded.

Multilateral export controls can buy time, and ongoing efforts to buttress them warrant strong support. However, continuing highest level U.S. political intervention is likely to be needed to overcome bureaucratic, industrial and foreign policy opposition overseas to tough controls.

The types of sanctions legislation now under consideration in Congress against overseas firms assisting other countries to acquire chemical weapons capabilities also would make those firms think twice before engaging in questionable details. Such sanctions legislation also would send a signal to other governments of the seriousness of U.S. concern.

More broadly, Mr. Chairman, it is not too soon to initiate discussions with other countries to work out informal, private understandings about what to do the next time chemical weapons are used. Our goal must be to avoid a repetition of Iraq's extensive and unpunished use of these weapons. Passage of proposed legislation to make chemical weapons users pay a price also would send an important signal to other countries.

Let me sum up, Mr. Chairman, based on experience in looking at the issue of sanctions in and out of the government, both in the academic environment, in the think tank environment and as an official of the Arms Control and Disarmament Agency.

Past experience with the imposition of sanctions is not encouraging. The actual imposition of sanctions has not turned countries around and cannot reverse exports already made. But, and this "but" is absolutely critical, the threat of sanctions, the threat of costly penalties can influence countries, can influence companies in their actions.

In addition, the imposition of sanctions sends a message to onlookers, to countries and companies standing on the sidelines about what the price of certain activities may be.

In thinking about sanctions, Mr. Chairman, it seems to me, however, that we also need to focus upon several other aspects.

One aspect is the conditions for the restoration of activities. What brings you back into a state of grace, so to speak, and I think the current legislation tries to specify that.

I think, Mr. Chairman, in thinking about sanctions it also is important to avoid too much flexibility. The presumption should be that sanctions will be imposed if certain conditions prevail, even though they may be waived. But the presumption should be in favor of sanctions if there is going to be sanctions legislation.

Let me touch briefly on the question of retroactivity. It seems to me that the answer to this question as the Congress and the Administration sort it out over the next months, the answer should reflect in part where sanctions fit in the broader context of chemical weapons arms control.

We will need the support of other governments for a complete and total chemical weapons ban, and we will need the support of other governments to strengthen export controls. And for this reason, I at least would err on the side of not putting retroactivity into the legislation but, instead, having a clear, if you will, drop-dead date after which certain activities by firms would lead to sanctions.

But, Mr. Chairman, this view on retroactivity may only be a residue of service in the Executive Branch, which leads one in that direction, as we have seen.

Mr. Chairman, in conclusion, the key to successful long-term efforts to control the proliferation of chemical weapons, in my view, remains conclusion of the complete and total chemical weapons ban now under negotiation. Other measures can buy time and other measures can help, and I believe that sanctions legislation would help.

But most important, I believe that both the Bush Administration and Congress need to make clear that rapid conclusion of such a ban is the top priority in chemical weapons arms control.

Thank you.

Senator SARBANES. Thank you very much, Mr. Dunn.

[The prepared statement of Lewis Dunn follows:]

TESTIMONY OF DR. LEWIS A. DUNN

ASSISTANT VICE PRESIDENT

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

ON

CHEMICAL WEAPONS PROLIFERATION

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL FINANCE AND MONETARY POLICY

OF THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS

U.S. SENATE

JUNE 22, 1989

I am pleased to have this opportunity to testify before the Subcommittee on International Finance and Monetary Policy of the Committee on Banking, Housing, and Urban Affairs on the important problem of the proliferation of chemical weapons, and how we can best seek to prevent it. As requested, I shall offer some brief summary remarks. My remarks draw on a more extensive analysis of chemical weapons arms control that I recently published in Survival, the journal of the International Institute for Strategic Studies. I request that my article in Survival be included in the record along with these summary remarks as my written testimony.

Chemical weapons proliferation has risen to the top of the global security agenda. Chemical weapons were used repeatedly by Iraq in the Gulf War. Estimates by Administration spokesmen indicate that upwards of 20 third world countries either possess, or are seeking to acquire chemical weapons. Many of these countries also are developing ballistic missiles that could be used for delivery.

In recent years, responses to this growing threat of chemical weapons proliferation have moved ahead on several different fronts. Progress has been made in the multilateral negotiations at the Geneva Conference on Disarmament on a complete and total ban on the acquisition, production, stockpiling, transfer, or use of chemical weapons. Under the framework of the Australia Group, supplier countries have sought to tighten export controls on chemicals. But as last winter's controversy over assistance by West German firms to Libya's Rabta chemical weapons plant demonstrated, the results of these suppliers' efforts have sometimes been mixed. Legislation has been introduced in both Houses of Congress to impose sanctions on firms that have assisted countries to acquire chemical weapons capabilities as well as on countries using these weapons.

During his election campaign last fall, President Bush declared: "And if I'm elected President, if I'm remembered for anything, it would be this: a complete and total ban on chemical weapons." The Bush Administration -- and the U.S. Congress-- now face three difficult questions in dealing with the threat of chemical weapons proliferation:

First, should the United States, in light of growing concerns about its effective verification, retreat from the goal of a complete and total chemical weapons ban?

Second, assuming a decision to stick with that goal -- which I support -- what steps can be taken now and in the future to contain its risks?

Third, what measures can be adopted to strengthen international export controls in this field, as well as to establish a presumption that chemical weapons users will "pay a price?"

A Chemical Weapons Convention

Verification is widely acknowledged to be the potential Achilles' heel of a complete and total chemical weapons ban. Even with extensive provisions for on-site inspection, uncertainties dominate the verification tally-sheet. In particular, monitoring civilian chemical industry facilities that use key precursor chemicals to detect misuse will be a demanding task. Detecting undeclared production of chemical weapons agents will be an even more formidable detection problem.

Mandatory short-notice inspection of suspect sites -- what often is termed anytime, anywhere challenge inspection -- offers at most a partial answer. It is highly unlikely that barring a mistake by the violator, inspectors would be permitted to uncover illegal activities.

Estimates of the military significance of undetected cheating -- whether by the Soviet Union or by a Third World country -- vary significantly. They depend heavily on the extent of the activity, the specific military situation, and the defensive measures available to the other side. Such estimates should not be overstated. Moreover, continued improvement in the East-West political relationship, as well as a defensive restructuring of Soviet conventional forces in Europe, could reduce the risks to the United States of these verification uncertainties.

Faced with these verification uncertainties, however, there is support in some quarters for backing away from the goal of a complete and total chemical weapons ban. Sometimes mentioned alternatives include emphasis on supplier controls without a treaty; pursuit of a treaty permitting countries to retain small stockpiles of chemical weapons for security; and a bilateral U.S.-Soviet chemical weapons disarmament agreement. All of these alternatives have important weaknesses, especially for efforts to prevent the proliferation of chemical weapons.

Most important, the verification uncertainties and potential military risks of a complete and total ban must be weighed against the important benefits of such a ban for U.S. efforts to check the proliferation of chemical weapons to conflict-prone third world regions. Among those benefits are:

First, international agreement to a legally-binding ban on development, acquisition, and use of chemical weapons would most signal renewed global support for non-use of chemical weapons. As a result, fewer countries would think seriously about the need for their own chemical weapons arsenal.

Second, successful negotiation and implementation of a complete and total ban, with widespread adherence, would go far to reverse the current perception that the increasingly widespread proliferation of chemical weapons is unavoidable. This, too, would lessen pressures to acquire such weapons.

Third, legally-binding obligations under a chemical weapons ban not to assist other countries to obtain chemical weapons would greatly assist our efforts to strengthen multilateral export controls and to ensure their effective implementation. One clear lesson from over fifteen years of nuclear export controls is that without such a legal foundation, U.S. and likeminded countries' attempts to strengthen export controls will face an uphill battle.

Fourth, though important, export control efforts by themselves can only buy time, slowing eventual acquisition of chemical weapons capabilities by Third World countries. This, too, is a lesson of nuclear export controls. A chemical weapons arms control treaty offers a longer term, political approach to chemical weapons proliferation.

Fifth, a complete and total ban would provide the strongest political foundation for sanctions -- economic, political, and if justified as a last resort military -- either against holdout countries seeking to acquire chemical weapons or in response to their actual use of chemical weapons.

Containing the Risks of a Complete and Total Ban

Assuming continued pursuit of a complete and total chemical weapons ban, measures can also be taken now and in the future to contain its risks for U.S. security.

Several different safeguards -- from continued support for chemical weapons defense and protective measures to continued commitment of intelligence resources to monitor chemical weapons potential -- might be undertaken as part of eventual adherence. These would hedge against illegal activities.

Parallel U.S.-Soviet confidence building measures might be agreed to set limits on permitted defensive exercises that could be used to hide illegal offensive preparations. Such measures would be consistent with other confidence building measures now being negotiated in Europe.

On a bilateral U.S.-Soviet basis, additional verification commitments to supplement those in the multilateral chemical weapons treaty also could be negotiated. This would help to enhance confidence in Soviet adherence.

Consultations with the Soviet Union and U.S. allies also are warranted now on how to bring into a complete and total ban the key target countries in the Third World. Their adherence would be essential to realize fully its benefits.

Next Steps on Export Controls and Sanctions

In parallel with intensified activity on the negotiations front, other steps should be taken to counter chemical weapons proliferation in the Third World before a complete and total ban is concluded.

Multilateral export controls can buy time, and on-going efforts to buttress them warrant strong support. However, continuing high-level U.S. political intervention is likely to be needed to overcome bureaucratic, industrial, and foreign policy opposition overseas to tough controls. The types of sanctions legislation now under consideration in Congress against firms assisting other countries to acquire chemical weapons capabilities also would make those firms think twice before engaging in questionable deals.

More broadly, it is not too soon to initiate discussions with other countries to work out informal private understandings about what to do the next time chemical weapons are used. Public warning by other governments about the costs of chemical weapons use could be sought. Our goal must be to avoid a repetition of

Iraq's extensive and unpunished use of these weapons. Passage of proposed Senate legislation to make chemical weapons users pay a price also would send an important signal to other countries.

Mr. Chairman, the key to successful long-term efforts to control the proliferation of chemical weapons, in my view, remains conclusion of the complete and total chemical weapons ban now under negotiation in Geneva. Other non-proliferation measures can buy time, but even those measures would gain considerably from a chemical weapons ban. Both the Bush Administration and the Congress should make clear that rapid conclusion of such a ban remains the top U.S. priority in chemical weapons arms control.

Thank you.

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Chemical weapons arms control

Hard choices for the Bush Administration

LEWIS A. DUNN

Chemical weapons arms control has risen to the top of the global security agenda. During his election campaign, George Bush declared: 'And if I'm elected President, if I'm remembered for anything, it would be this: a complete and total ban on chemical weapons.'[1] In recent months, world attention has focused on Libya's construction of a chemical weapons plant, with covert assistance by Western companies. At the January 1989 Paris Conference on the Prohibition of Chemical Weapons, 149 nations agreed on the dangers of the use of chemical weapons, and stressed the need for an early conclusion to a convention banning the development, production, stockpiling and use of these weapons.[2]

Multilateral negotiations on a chemical weapons convention have been under way at the Geneva Conference on Disarmament since the early 1980s. Bilateral US–Soviet talks have also taken place. Considerable technical progress has been made on a draft convention. But even with intrusive on-site inspection, high-confidence verification of a complete and total chemical weapons ban is likely to prove unattainable.

President Bush therefore needs to choose between holding the course on a total ban and retreating from that goal. In either event, the President needs to begin mustering Congressional backing for his policy. If Bush fails to clarify his objectives now, he runs the risk of having to reverse direction abruptly later, when the stakes are even higher. And if he fails to gain Congressional backing for his chemical weapons arms-control strategy, he faces the danger of negotiating a treaty that might not win US Senate ratification.

After carefully examining the costs, benefits and risks of the various policy options available to the Bush Administration, this article concludes that the President should continue to pursue a complete ban on chemical weapons as a top US arms-control objective.

Rising concern about chemical weapons

Modern efforts to control chemical weapons have a long history, dating from the turn of this century. The Hague Peace Conferences of 1899 and 1907 both resulted in agreement not to use projectiles containing poison

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gas in war. That early agreement, however, broke down in the course of World War I, under the pressure to find a means to break the stalemate of trench warfare. As a result, there was widespread use of several different types of chemical agents, including chlorine and mustard gas, by both sides.

Revulsion over gas warfare led to the 1925 Geneva 'Protocol for the Prohibition of Use in War of Asphyxiating, Poisonous, or Other Gases, and of All Analogous Liquids, Materials, or Devices, and of Bacteriological Methods of Warfare'. Although the Geneva Protocol is still the main international legal constraint on chemical weapons, it does not prohibit their production and stockpiling, and many of the 125 parties to the Protocol reserved the right to use chemical weapons in retaliation and against non-parties. As a result, the Geneva Protocol in effect prohibits the 'first-use' of chemical weapons under some circumstances, and little more. More recently, agreement was reached in 1972 on a convention to ban the development, production and stockpiling of bacteriological and toxin weapons, the so-called Biological Weapons Convention. One provision of this convention commits the parties to good faith negotiations to reach agreement on a chemical weapons ban.

Between the two World Wars, research continued on chemical weapons agents, resulting in the development of nerve agents. But chemical weapons were not used on the battlefield in World War II, for fear of retaliation as well as military concerns about their utility. Sporadic use, for example by Italy in Ethiopia in 1935, appeared to be isolated exceptions to the norm. In the past two decades, however, the Geneva ban has increasingly begun to break down, and chemical weapons have spread to a growing number of countries.

Chemical agents were employed by Egypt against Yemen in the early 1960s. The Reagan Administration concluded that the USSR was involved in the use of chemical agents in South-east Asia and Afghanistan in the late 1970s and early 1980s. More recently, Libya reportedly used chemical weapons in Chad. Although reports of Soviet use have remained controversial, there is no doubt whatever about the repeated use of chemical weapons by Iraq, if not also by Iran, in the Gulf War.

In particular, Iraqi use of mustard and cyanide agents helped to contain the Iranian counter-offensive in 1984, and its resort to mustard and possibly nerve agents contributed to its breakthroughs on the Faw Peninsula in the spring of 1988. Further, the implicit Iraqi threat to resort to missile attacks with chemical weapons against Tehran – a follow-up to the 'War of the Cities' of February–April 1988 – may well have contributed to Iran's eventual decision to accept a cease-fire. Most recently, there is compelling evidence that in August 1988 Iraq used poison gas against Kurdish rebels. Although the US and some other countries have condemned Iraqi use of chemical weapons, broad-based international condemnation by the United Nations or other bodies has been lacking, thus further eroding existing constraints on the use of these weapons.

More widespread acquisition of chemical weapons capabilities by third-world countries has greatly heightened concern about chemical warfare. US Director of Central Intelligence William Webster estimated in December 1988 that 20 third-world countries either possess, or are seeking to acquire chemical weapons capabilities.[3] In addition to Iraq, Iran and Libya, these reportedly include Syria, Egypt, North Korea, South Korea, Burma, China, Taiwan, Ethiopia, Pakistan, India, Vietnam and Israel.

Compounding the danger posed by the potential spread of chemical weapons to conflict-prone third-world regions is the spread of short- and medium-range (100–1,500 km) ballistic missiles. Already in the hands of countries such as Iran, Iraq, Saudi Arabia, Syria, Israel and India, missiles may soon be in the arsenals of Pakistan, North and South Korea, Brazil, Argentina, Egypt, and others. The US-sponsored missile technology control regime, announced in 1987, has not been successful in controlling this problem. Key countries such as the Soviet Union and China have not only remained outside the regime, but have been willing to supply missiles to third-world countries. Other new suppliers, including Argentina (working with Egypt), Brazil, South Korea and India, are on the horizon.

Finally, concern about chemical warfare has been heightened in the US and Western Europe by the steadily improving Soviet capabilities in this area.[4] Although it did not admit until 1987 that it possessed chemical weapons, the USSR has modernized its chemical warfare capability considerably over the past decade. The Reagan Administration pursued two responses to the growing Soviet threat. First, it continued to upgrade US chemical defence capabilities and convinced Congress to support production of a new generation of modern chemical weapons as a deterrent to Soviet use. Second, it pursued arms-control negotiations aimed at a complete ban on chemical weapons, as well as other efforts to strengthen chemical export controls.

Progress and problems on the negotiations front

Under way since 1980, multilateral negotiations at the Geneva Conference on Disarmament have now reached agreement on the basic goal of a complete ban on the development, production, acquisition, possession, transfer, or use of chemical weapons. A draft 'rolling text' has been developed, with brackets and gaps to indicate areas of disagreement or sections in need of further work. It draws in part on the draft US chemical weapons convention tabled by then Vice-President Bush in 1984. The draft 'rolling text' of the Chemical Weapons Convention is as follows:[5]

- covers virtually all toxic chemicals that can cause death, incapacitation, or permanent harm, including key chemical weapons precursors;
- prohibits chemical munitions and equipment for use of chemical munitions, but allows defensive preparations;
- commits parties not to assist other countries to acquire chemical weapons;

- provides for extensive data exchanges, including declarations of chemical weapons stockpiles, production facilities and research and development sites, as well as of permitted activities with toxic chemicals;
- provides for systematic international on-site inspection to verify declarations of chemical weapons and related production facilities;
- provides for the destruction of all chemical weapons, beginning within twelve months and ending within ten years of the convention;
- requires the closing of chemical weapons production facilities within three months, and their destruction within ten years;
- provides for systematic on-site inspection and continuous technical monitoring with instruments of declared chemical weapons stocks, closed production facilities, and verification of their destruction;
- sets limits and conditions on permitted production and related activities with designated super-toxic chemicals and key precursors to chemical weapons;
- requires systematic on-site inspection and technical monitoring of chemical industry facilities producing and using key chemical weapons precursors in legitimate activities;
- provides for an international 'Organization for the Prohibition of Chemical Weapons', with an international inspectorate to carry out the convention's inspection and monitoring provisions; and
- includes provision for consultations and fact-finding missions to deal with questions of compliance.

Despite this considerable progress, important technical matters still remain to be resolved. It has proved difficult to reach agreement on lists of toxic chemicals and precursor chemicals to include within the convention's prohibitions and regulations, especially when so-called 'dual-use' chemicals with legitimate civilian uses are involved. Procedures to revise the lists to add new chemicals also remain to be resolved. Thresholds for monitoring and reporting of permitted key precursor chemicals and how to treat less toxic chemicals used in large volumes in civilian chemical industry are other technical issues. Most important, crucial aspects of both the technical details and broad conceptual outlines of verification remain to be negotiated.

From the start of the negotiations, the problem of monitoring compliance with a total ban has been one of the most troublesome issues. National technical means, such as satellites, can offer only limited help. The external characteristics of chemical weapons production facilities are similar to those of civilian chemical plants, while large, conspicuous plants may not be needed for the production of some chemical warfare agents. In any event, most countries do not possess national technical means, while the two super-powers would likely be reluctant on security grounds to share the detailed results of their own intelligence.

As a result, the draft rolling text places great emphasis on systematic on-site inspection and technical monitoring for purposes from confirming the elimination of declared stockpiles to monitoring certain civilian chemical activities. But considerable work is still necessary in order to define the detailed guidelines for inspection, as well as the rights and responsibilities, structure and procedures, and funding of the international organization which would carry out these on-site inspections. Similarly, there are many gaps remaining in the development of the necessary instruments, measuring devices and related technical monitoring equipment.

Of equal importance, there is as yet no agreement on whether to include within the convention the right to demand an 'anytime, anywhere' challenge inspection of a suspect site, as in the 1984 US draft chemical weapons treaty tabled by Vice-President Bush. After initially opposing this form of inspection, the USSR under President Mikhail Gorbachev has agreed to it in principle. Many Western European allies and third-world countries, however, have opposed such challenge inspections.

One possible compromise measure has been proposed by the United Kingdom. Under this solution, a country would have a right to request a challenge inspection, anytime, anywhere, but the challenged party would have a right of refusal subject to providing some other means to resolve the compliance questions in dispute. A different proposal has been set forth by West Germany. In this proposal, the international inspectorate of the chemical weapons organization would be empowered to carry out routine and random *ad hoc* on-site inspections at all production facilities in a country's chemical industry.

Two closely-related political problems also will need to be overcome for the negotiation and implementation of a total ban. As became clear at the Paris Conference, a number of third-world countries, led by some Middle Eastern states, may seek to link steps to control the spread of nuclear weapons with agreement to eliminate chemical weapons. Though in part only a bargaining device, this could become a convenient rationale for non-adherence to a convention. But the pay-offs for the United States of a total ban rest heavily on its contribution to checking chemical weapons proliferation in the Third World. Ensuring the adherence of all or most of the key or potential chemical weapon states is still another problem on the horizon.

The chemical suppliers' group

A group of nineteen chemical supplier countries has been meeting informally since 1985 to toughen export controls on chemicals that are precursors to the manufacture of chemical weapons. This so-called 'Australia Group' includes only Western countries, specifically the European Community plus Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United States. US–Soviet bilateral talks on chemical weapons non-proliferation also have covered these issues.

The Australia Group has been partly patterned on the Nuclear Suppliers' Group, which in the mid-1970s formulated guidelines for more effective control of nuclear technology and equipment exports. Under Australia's auspices, agreement has been reached on a limited list of critical items to control, and there have been some successes. But as indicated by the extensive involvement of West German firms in Libya's chemical weapons plant – as well as the aid by Western firms to Iraqi and Iranian chemical weapons programmes – the supply problem is far from contained. Differences over what should be controlled, combined with varying degrees of high-level national commitment and a frequent lack of legal and regulatory mechanisms, all hinder the work of the Australia Group.

Proposed originally by President Reagan in his last address to the United Nations, the Paris Conference provided a modest impetus to such efforts to strengthen chemical export controls. Its final declaration expressed 'grave concern' about the spread of chemical weapons, and called on states to 'exercise restraint and act responsibly in accordance with the purpose of the present declaration.' In the export arena, these were code words for tougher supply controls. The Conference's final declaration also reaffirmed the participants' commitment to the 1925 Protocol's ban on the use of chemical weapons and their support for a 'global and comprehensive and effectively verifiable' chemical weapons convention.

However, the final declaration purposefully steered clear of efforts to condemn Iraqi use of chemical weapons. The participants also could not agree on a more general call to strengthen sanctions against chemical weapons use, such as President François Mitterrand had proposed at the UN in September 1988. At most, the countries present were prepared to support strengthened procedures to facilitate and make more automatic investigations by the UN Secretary General of alleged chemical weapons use.

By contrast, there are growing pressures within the United States to impose unilateral sanctions on chemical weapons activities. In 1988, both the US House and Senate passed legislation, which died with the end of the session, to impose a range of sanctions on Iraq for using chemical weapons. Other legislation was introduced which would have imposed sanctions on firms that provided assistance to countries building chemical weapons production plants. Both types of sanction measures are already on the 1989 US legislative agenda.

The verification Achilles' heel

In seeking to build on these past activities, the Bush Administration faces three difficult questions in its pursuit of chemical weapons arms control. Should the United States, in light of growing concerns regarding effective verification, back away from the goal of a complete and total ban? Assuming a decision to remain with this goal, what steps could be taken to contain its risks? Finally, what could be done by chemical suppliers to strengthen export controls, as well as to establish a presumption that chemical weapons users will 'pay a price'?

Verification is widely acknowledged to be the potential Achilles' heel of the complete ban on the development, production, acquisition, possession, transfer and use of chemical weapons now being sought in the Geneva negotiations. Uncertainties dominate the verification tally-sheet.

Systematic on-site inspections and monitoring would be able to confirm the size of declared stockpiles, as well as monitor their eventual elimination. As in the case of the Intermediate-range Nuclear Forces (INF) Treaty, however, these inspections would not be able to confirm that the declarations themselves were accurate. Illegal undeclared stocks could remain. This would be more troublesome in a chemical weapons convention than in INF, moreover, because of the even greater uncertainty regarding Western estimates of Soviet capabilities.

Similarly, systematic on-site inspection would suffice to monitor the closing of declared chemical weapons production facilities. Backed up by continuous technical monitoring, for example with cameras and seals, on-site inspection also would likely be able to verify that closed facilities had not been used clandestinely to produce chemical agents in the period before their elimination, though with somewhat less confidence. It again would be able to verify elimination of declared facilities. But here, too, systematic on-site inspection would not be able to confirm that still other undeclared production facilities did not exist.

Monitoring civilian chemical facilities that use key precursor chemicals would be an even more demanding task. Many technical analysts believe, for example, that a legitimate civilian facility could be switched to production of super-toxic chemical agents and back in 12 hours or, at most, days, without too much difficulty and without a high risk of detection. The availability of portable, highly sensitive sampling devices as well as continuous monitoring with technical means could increase the likelihood of detection. But experience with International Atomic Energy Agency safeguards suggests that development of reliable, portable, tamper-proof instruments and seals will not be easy. Nor can necessary prompt and unfettered access to a plant be assumed. Comparable uncertainties characterize monitoring of civilian chemical plants to detect excess production or illegal diversion of key precursors for use in an undeclared facility to produce chemical agents.

Indeed, the risk of undeclared production facilities poses the last and most formidable detection problem. Limited production of modern chemical weapons agents need not require a large amount of space and equipment. Besides, particularly in a large industrial country such as the Soviet Union, chemical weapons plants can be hidden within the larger industrial fabric. This may be more difficult in a third-world country, however, as evidenced by revelations of the recent chemical weapons activities of Libya and Egypt.

'Anytime, anywhere' challenge inspection of suspect sites or activities – at the heart of verification in the 1984 US draft treaty – offers at most a partial answer to these verification uncertainties. The risk of short-notice challenge inspection of suspected violations would likely exert some modest deterrent impact, encouraging countries to make complete declarations, while causing their leaders to think twice about illegal activities. A request for a challenge inspection also might provide a means to prod a country to clean up illegal activities that had been detected by national technical or other intelligence means. That said, hidden production of limited quantities of chemical agents could well take place without 'ringing an alarm.' to trigger a challenge. Further, barring operation of Murphy's Law, there is very little chance that a challenge inspection would be allowed to detect actual cheating and find the so-called 'smoking gun'. The challenged party could be expected, regardless of the agreed procedures, to find a means to delay, thereby permitting disposal of evidence of illegal activities.

In addition, anytime, anywhere challenge inspection – in the absence of some limits – would put at risk sensitive intelligence, defence and nuclear weapons information within the United States. Linkages between defence and nuclear weapons production and storage facilities and chemical weapons activities could be alleged, and some requests to inspect sensitive sites would have to be expected. In the United States, such challenge inspections would clash with constitutional protections against warrantless searches.[6] Economic and other costs of preparation also would be high with an unqualified right to challenge inspections.

Nonetheless, assuming undetected illegal production of chemical warfare agents, or maintenance of illegal undeclared stocks, a country would still need to turn those agents into weapons and deploy them militarily. This would provide another opportunity for detection. Its likelihood would depend on the quantities of chemical weapons involved, and on whether extensive preparations for use had to be undertaken. Here, too, high confidence overall in the prospects for detection may not be attainable.

At the same time, there may be an important difference between detection of Soviet illegal military activities and those in a third-world country. Extensive Soviet chemical defences would make it easier to hide offensive programmes. By contrast, here again, confidence of detection could be higher for third-world countries. Steps, as suggested below, to limit defensive capabilities would make any such undetected break-out capability harder for the USSR to maintain. But limits on US defences would remove an important safeguard against undetected illegal activities.

Estimates of the military significance of undetected cheating – whether by the USSR or a third-world country – vary significantly and are themselves uncertain. They depend heavily on the extent of activity that might go undetected, the specific scenario for the use of chemical weapons, and the defensive measures available to the other side.

For instance, there are plausible Warsaw Pact–NATO scenarios in which use of very limited quantities of clandestine chemical weapons (such as in a Soviet theatre missile attack on NATO air bases, command and control, and air defences) could prove very damaging, if not potentially decisive. Comparable scenarios can be envisaged for use of limited stocks by a third-world country, for example by Syria against Israeli airfields, mobilization bases, and command and control. There are other situations in which only large-scale chemical attacks could alter the military equation, as in the closing stages of the Iran–Iraq War. Even then, the military outcome would depend on many other considerations, such as the availability and training in use of chemical protective measures, overall military preparedness, and the political resolve on both sides.

Backing away from a complete ban: pros and cons

Faced with these verification uncertainties, there is growing support in some quarters for backing away from the goal of a complete chemical weapons ban. This was the clear recommendation, for example, of President Reagan's Commission on Integrated Long-Term Strategy, headed by former Under Secretary of Defense Fred Iklé and Albert Wohlstetter.[7] Assuming a decision to shift ground, several different approaches might be considered. However, all of these alternatives have important drawbacks of their own.

While continuing to stress that a complete and verifiable ban is a US goal, the Geneva negotiations could be reduced in priority. Instead, emphasis might be placed on further steps to strengthen chemical export controls and the existing Geneva Protocol's ban on the use of chemical weapons.

More specifically, agreement could be sought to establish formal supply guidelines, comparable to the London Nuclear Suppliers' Guidelines, and procedures set up for the types of routine intelligence-sharing and consultation that are critical to successful export control endeavours. High-level presidential intervention could be used to work with other countries' leaders to ensure that their bureaucracies placed export control high on their agenda, and that they instigated the legal and regulatory structures needed for control. Going beyond the Paris Conference, an international consensus could be sought on specific steps that should be taken in the event of the next use of chemical weapons.

This approach would, in effect, treat a chemical weapons convention as a long-term goal. Such a policy shift would likely be strongly opposed by some US European allies – in particular, West Germany – and by Japan as well as by many other countries. It would make it harder to maintain Alliance cohesion and support on other force modernization issues, while permitting the USSR to seize the high ground politically. Not least, without the legal and political prop of a new, complete ban, US efforts to strengthen export controls and international co-operation in the event of use would fight an uphill battle.

A somewhat different approach would be to shift from pursuit of a total ban to a non-proliferation agreement, modelled partly on the 1968 Nuclear Non-Proliferation Treaty (NPT), and partly on the earlier, but since renounced, French proposal that countries be permitted to retain small 'security stockpiles' of chemical weapons. Under such an agreement, the existing chemical weapons states would commit themselves to reduce their stocks of chemical agents to an agreed minimum level, sufficient only for deterrence. Production facilities would be shut down or eliminated. These states also would be obliged not to assist other countries to acquire chemical weapons, or the equipment and materials to manufacture them. All other countries would agree not to obtain these weapons.

A chemical weapons non-proliferation treaty would provide some measure of assurance against illegal capabilities, or against decisions by key third-world countries not to accede to a complete ban. But verification uncertainties would still remain, and could even be greater due to the continued presence of permitted chemical weapons stocks. In addition, the fact that powers already in possession of chemical weapons would be allowed to preserve some stockpiles, even at minimal levels, would be unacceptable to many countries that do not have stockpiles of their own. This would include those third-world states at the root of current concerns about chemical weapon proliferation, and many US allies. Paradoxically, it could result in proliferation, by legitimizing programmes to join the chemical weapons club before the deadline.

Still another more limited approach would focus not on production and stockpiling of chemical warfare agents, but on banning activities needed for their weaponization and militarization. In effect, this approach would seek to take the Geneva Protocol's ban on use one step back, thereby making it harder for countries possessing chemical agents to use them offensively in war. It would target the broad range of activities necessary to develop a high-confidence capability regarding use of chemical weapons. This would include: writing training manuals; giving war college courses; undertaking troop training and exercises for offensive uses; putting a logistics net in place; and forward deployment of weapons and equipment. Commitments to reductions of declared chemical weapons stockpiles and production capabilities might be added.

Controls on militarization, if feasible, would lessen the military advantages of chemical weapons, thereby helping to strengthen constraints on acquisition and use. Applicable to both chemical 'haves' and 'have nots', the political drawbacks would be less problematic, although the US would still be left open to Allied and Soviet criticism that it had abandoned the goal of a complete ban. The burdens of on-site inspection would be reduced. However, as long as defensive chemical weapons activities remain completely unregulated, it would likely be very difficult to distinguish prohibited offensive activities from legitimate defensive training. Most important, this approach would have little impact on the spread of chemical weapons to additional third-world countries, which could be prepared to resort to these weapons without extensive military preparations or training.

One final set of alternatives to a total ban would entail pursuit of non-global approaches. Chemical-weapons-free zones for specific regions would be an example. But negotiation of these could prove as difficult as the global convention. Comparable verification problems would exist, and many countries would be reluctant to renounce chemical weapons as long as the United States and the Soviet Union still possessed them. Another non-global approach would be to negotiate a bilateral US–Soviet reductions agreement, under which both countries could undertake to reduce their stockpiles of these weapons to an absolute minimum. Should a global ban prove too difficult now, this would provide a politically useful symbol of commitment to broader chemical weapons arms control. It also might offer useful experience in the development of verification approaches and technologies. Not least, US–Soviet reductions would limit the Soviet chemical warfare threat to NATO. But such an agreement would have little impact on the pressing problems of third-world proliferation.

Staying with a complete ban . . .

All of these options for shifting course away from pursuit of a complete chemical weapons ban would entail considerable costs. More important, the verification uncertainties and the potential military risks of a total ban must be balanced against its important potential pay-offs for US and global efforts to check the spread of chemical weapons to conflict-prone third-world regions.

International agreement to a legally-binding ban on the development, acquisition and production of chemical weapons would serve to delegitimize such weapons, and to demonstrate renewed global support for non-use. Politically, widespread adherence also would go far to reverse the current global perception on the part of many countries – already becoming a self-reinforcing prophecy – that chemical weapons are the wave of the future. As a result, fewer states would think seriously about the need for their own chemical weapons arsenal. With concerted diplomacy on the part of the US, the USSR and others, there is reason to believe that many, if not most, of the critical third-world countries could be induced to adhere.

In addition, legally-binding obligations against assistance to countries seeking chemical weapons would greatly assist efforts to tighten supplier controls on hold-outs to a complete ban. This is one clear lesson from over fifteen years of US efforts in the nuclear export control field to convince other countries to take a tough policy stand on questionable nuclear exports, and to put in place the necessary supporting legal foundations. While these obligations might be sought outside of an international convention, they are more likely to be achieved within the broader context of a complete ban, with its mix of obligations and purposes. They are also more likely to be implemented effectively in the face of bureaucratic inertia and industrial pressures if they rest on an international treaty obligation. That, too, is a lesson from the successes and failures of nuclear export controls.

Futhermore, a complete ban would provide the strongest political foundation on which to build an international consensus to ensure that in the future chemical weapons cannot be used with impunity. Its basic purposes could be appealed to when support for political, economic or even military sanctions is being sought from other countries. Such a response would be more defensible as legitimate support for a globally-acknowledged norm. This, too, would help to neutralize the threat of some convention hold-outs.

Finally, in weighing these potential gains from a total chemical weapons ban against the risks to the United States of undetected cheating by the

USSR or a third-world country, it is important to consider the broader political-military context. Because of European political attitudes, it already has been determined that new and modernized US chemical weapons are to be stored in the United States, to be returned to Europe in a crisis. Because of possible logistics problems or political difficulties in rushing these weapons back to Europe in time to retaliate against the most plausible Soviet threat, their military utility and deterrent impact would be reduced. Further, even in the absence of chemical weapons, the risk that any conflict in Europe would escalate to use of nuclear weapons would continue to exert a compelling deterrent impact on Soviet leaders contemplating the benefits of illegal production and then use of chemical weapons – or any use of force.

With regard to third-world contingencies, the threat of retaliation with advanced conventional weaponry would likely be a compelling deterrent against the use of limited stocks of illegal chemical weapons. The prospect that the use of these weapons against US forces would not be decisive in the end also would lessen the practical impact of a US decision to give up its chemical weapons and accept the verification uncertainties of the convention. Besides, barring very large-scale use of chemical weapons by a third-world country in a Korea or Vietnam-type conflict, it is difficult for political reasons to envisage US use of chemical weapons in retaliation.

. . . but reducing its risks

Steps could also be taken to reduce the risks to the US of a complete and total ban, and to enhance the effectiveness of its likely verification provisions. In particular, several different types of safeguards might be pursued as part of eventual adherence to any total ban. Moreover, parallel US–Soviet confidence-building measures to set limits on permitted defensive exercises and preparations involving chemical weapons warrant exploration to enhance US confidence that any Soviet steps to prepare for use of illegal chemical agents would be detected. Bilateral US–Soviet verification commitments also might be undertaken to supplement the convention's monitoring provisions.

There is a precedent for safeguards against non-compliance. To win Senate ratification of the Limited Nuclear Test Ban Treaty in 1963, President Kennedy agreed to four safeguards to lessen the impact and military significance of Soviet violation. These were: continued and vigorous underground nuclear testing; maintenance of the national nuclear weapons laboratories; preparation and readiness for rapid resumption of atmospheric nuclear testing; and vigorous development of national technical means of verification.

One extremely important safeguard to help reduce the risks to the US of adherence to a chemical weapons convention would be continued support for chemical weapons defence and protective measures. Funding for protective measures, from less cumbersome individual protective gear to decontamination equipment, would be one way to lessen the pay-offs of illegal chemical weapons. Continued unit training in chemical weapons detection and protection would be another. In this regard, it would be important as well to maintain trained cadres and specialists in chemical warfare.

To hedge against the possibility of illegal Soviet chemical weapons capabilities or extensive use by a third-world country, the United States – within the legal limits of an eventual convention – could also maintain a mobilization base for resumed production of these weapons. Plans could be developed and back-up contractual arrangements negotiated for the short-notice conversion of selected civilian chemical plants to the production of agents. Similar measures could be set up for munitions and delivery means. While several steps back from the French-proposed security stockpile, it would serve much the same objective. Depending on how far these preparations were carried, however, they could come to appear not as a safeguard, but as a preparation for a break-out from the convention. This tension is unavoidable. It, too, might be discussed on a bilateral basis with the USSR.

There are already several reasons for moving towards development and deployment of anti-tactical ballistic missile defences, including mobile systems that could be rapidly deployed in non-NATO contingencies. Such missile defences also would provide a safeguard against illegal production, retention or use of chemical weapons. Deployment would counter Soviet use of short-range missiles armed with chemical weapons against NATO air defence, command and control, reinforcement airfields and pre-positioned equipment. Particularly for US friends and allies in the Third World faced with hostile neighbours in possession of small numbers of ballistic missiles, the prospect of rapidly-deployable mobile missile defences (which would be technically feasible in the time period involved here) could lessen the risks of adherence to a convention. Defences also would provide protection for US power projection forces in third-world contingencies.

Continued commitment of intelligence resources to monitoring potential chemical weapons capabilities, particularly in the Third World, would be another safeguard. This would be a starting point for co-ordinated US–Soviet diplomatic initiatives to convince such countries, nearly all of whom are closely linked to one or the other of the two superpowers, to join the convention. It would also increase the prospects for the detection of clandestine capabilities, while helping to deter them.

As already noted, anytime, anywhere short-notice challenge inspection could well put at risk sensitive US defence, intelligence and nuclear weapons facilities, which would be subject to scrutiny by the international inspectorate. American acceptance of the UK compromise proposal, which would provide a right of refusal to challenge inspection but with an obligation to offer other means to satisfy compliance concerns, would be one way to protect these US interests. At the same time, the possibility of such challenge inspections is likely to exert at least some deterrent impact on potential violators. This approach could be supplemented by a continued right to short-notice inspection on demand of declared chemical weapons storage sites and former production facilities. The type of *ad hoc* inspection of chemical industry proposed by the FRG also might be added.

Further, the United States and the Soviet Union, with their allies, could seek to negotiate parallel bilateral confidence-building measures to limit the scope, frequency and characteristics of chemical weapons defensive activities by the Warsaw Pact and NATO. The USSR presently engages in very extensive chemical weapons exercises and maintains levels of dual-purpose equipment that would provide considerable cover for offensive preparations. It is therefore necessary to identify possible restraints on defensive activities that would be sufficient to permit training and protection against chemical weapons use, but insufficient to provide high confidence that offensive preparations would go undetected.

Finally, bilateral US–Soviet verification commitments extending beyond those within the convention could be negotiated. For example, bilateral provisions might permit a right to exercise any inspections that the international inspectorate chose not to do because of future manpower or funding constraints. Different or more intrusive instruments and monitoring would be another possibility.

Next steps for the Bush Administration

President Bush needs to choose whether or not to remain with the goal of a complete and total chemical weapons ban. Despite verification uncertainties, he should do so, while taking steps to contain its risks.

In that case, increased bilateral US–Soviet consultations are a key to finding solutions to the outstanding problems that must be resolved in order to achieve an early conclusion to a chemical weapons convention. Parallel consultations with a limited number of other countries also could help to ensure the necessary broader support for such solutions. As in the negotiation of the NPT, an agreed text could be submitted first to the Geneva Conference on Disarmament, and then to the United Nations for further consideration. At the same time, continued efforts are in order so as to find a way to permit important countries that are not members of the Conference on Disarmament to participate in its work on this issue.

Consultations with the Soviet Union and US allies should begin to focus as well on how to bring into a future convention the key target countries in the Third World that are often thought to have, or to be seeking, a chemical weapons capability. These include Iran, Iraq, Libya, Syria, Egypt, North Korea, South Korea, Burma, China, Taiwan, Ethiopia, Pakistan, India, Vietnam and Israel. Virtually all of these states have close ties to one or the other super-power; ensuring their adherence to the convention would be critical to realizing its potential pay-offs. US–Soviet consultations, in turn, would need to address possible parallel bilateral confidence-building or verification arrangements.

It is none too soon for the Bush Administration to begin working to bring Congress on board. In particular, the likely verification uncertainties need to be set out frankly, as does the case for going ahead despite them and for establishing possible safeguards. This will be vital to future Senate ratification.

In parallel with active pursuit of the negotiations track, various other steps need to be taken to counter chemical weapons proliferation in the Third World before a finished treaty is in place. Building on the results of the Paris Conference, the United States and other countries need to keep up a drumbeat of public diplomacy against the use of chemical weapons. Official statements condemning their use should be solicited, moreover, not only from traditional allies, but also from China, the Third World and the Soviet Union. Agreement to procedures for 'automatic' investigations by the UN Secretary General of alleged chemical weapons use, as is currently being sought, would also help to ensure that all future use becomes a subject of international attention and concern.

Discussions should be initiated with other countries to try to work out informal private understandings about what might be done the next time chemical weapons are used. These private discussions could be reflected in a chorus of public warnings about the potential costs of using chemical weapons. The aim would be to avoid a repetition of the failure to make Iraq pay a price for its extensive – and successful – use of these weapons. That failure has contributed to the perception of the low risks involved in going down the path to chemical weapons; future repetition would only compound that lesson. More specific measures could include selective embargoes of high-technology exports and arms; import restrictions; cutbacks in financial assistance; travel restrictions; and loss of access to preferential trading arrangements for some products.

In this regard, the United States ought to take the lead by passing legislation that would impose these types of specific sanctions on countries that use chemical weapons. In addition, measures could be taken to ensure that firms which assist other countries to acquire chemical weapons lose access to the US market, until such activity stops. Such sanctions, now taking shape in various legislative proposals, would, of course, reduce US flexibility; if imposed, they would likely entail political, economic and other costs. But a readiness to take this step would send an important signal to other countries and firms that chemical weapons non-proliferation is in practice a top US priority.

With regard to export control, support by West German firms for Libya's chemical weapons plant again demonstrates the need to urge those suppliers that have not yet done so to establish the legal and regulatory foundation for controls on chemical weapons related materials and equipment. Even then, effective implementation of such controls is likely to require continuing high-level US political intervention, in that bureaucratic, industrial and foreign-policy forces in many other countries are reluctant to accept toughened controls and limits on exports. To overcome that inertia, chemical weapons non-proliferation needs to be high on the presidential agenda with other leaders.

Concerning the Libyan plant, various public reports suggest that without further outside assistance – whether technical know-how, materials or equipment – Libya may not be able to bring it into operation. Keeping up the pressure on other suppliers to head off that assistance, therefore, is the first objective. Should the plant's operation be imminent, continuous presence inspection – with free access to all parts of the plant – ought to be sought to provide warning of use for chemical weapons production. Refusal to accept such a presence, or the sudden termination of it, would provide a better political foundation for use of military force as a last resort to keep a growing chemical weapons stockpile out of Libyan control.

Each of these parallel non-proliferation efforts would gain considerably from a successful conclusion to the chemical weapons convention now under negotiation in Geneva. A total ban would offer the best prospects for restraining existing chemical weapons activities, send the most powerful signal condemning use of these weapons, establish a legal and political buttress for chemical supplier controls, and provide heightened political legitimacy for sanctions against chemical weapons users.

In the coming months, President Bush will need to confront the hard choice of whether to reaffirm his earlier support for a complete and total chemical weapons ban, or to shift US policy towards more modest objectives. This will require striking a balance between the risks of a chemical weapons convention and its potential pay-offs, between most especially the potential military risks of undetected Soviet chemical weapons production and the benefits of a convention in bringing under control the spread of chemical weapons throughout conflict-prone third-world regions. Rather than stepping back from his earlier views, Bush should make clear that the rapid conclusion of a complete and total ban remains the top US priority in chemical weapons arms control.

Notes

[1] Remarks at University of Toledo, Toledo, OH, 21 October 1988. Press Release, Office of the Vice-President.

[2] Final Declaration of the Paris Conference on the Prohibition of Chemical Weapons, 11 January 1989. Documentation, *Survival*, vol. XXXI, no. 2, March/April 1989, pp. 179–80.

[3] Remarks by William H. Webster, Director of Central Intelligence, before the Council on Foreign Relations, Washington DC, 12 December 1988.

[4] See *Report of the Chemical Warfare Review Commission*, June 1985, chaired by Ambassador Walter J. Stoessel, pp. 25–8.

[5] See *Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament*, CD/874, 12 September 1988.

[6] See especially David A. Koplow, 'Arms Control Inspection: Constitutional Restrictions on Treaty Verification in the United States', *New York University Law Review*, vol. 63, no. 2, May 1988.

[7] See *Discriminate Deterrence*, Report of the Commission on Integrated Long-Term Strategy (Washington DC: USGPO, January 1988), p. 42.

LEWIS A. DUNN

Dr. Dunn joined the National Security Studies and Systems Group of Science Applications International Corporation in 1987, and was promoted to Assistant Vice President in 1989 (Negotiations and Planning Division). At SAIC, Dr. Dunn has managed projects and conducted analyses on nuclear, chemical weapons, and nuclear testing arms control; on-site inspection and treaty verification; nuclear non-proliferation; and long-term defense planning issues.

From 1983-1987, he was Assistant Director of the U.S. Arms Control and Disarmament Agency, a position to which he was appointed by President Reagan and confirmed by the U.S. Senate with Assistant Secretary rank. In that capacity, he developed and implemented U.S. nuclear non-proliferation policy initiatives to deal with problem countries, strengthen nuclear export controls, and support international institutions. He was an active participant in U.S.-Soviet nuclear non-proliferation bilateral consultations. At ACDA, Dr. Dunn also was involved in the early development and later pursuit of multilateral measures to control the spread of ballistic missiles and missile technology.

As Ambassador to the 1985 Nuclear Non-Proliferation Treaty Review Conference, Dr. Dunn designed and carried out the two-year U.S. strategy for that successful conference. He consulted widely with other governments, led the U.S. delegation at the Conference, and negotiated the Final Document on the part of the United States.

Dr. Dunn also served as Ambassador to the 1987 United Nations Peaceful Uses of Nuclear Energy Conference. Working with other governments, he helped to ensure that the Conference entailed serious technical exchanges on the varied potential benefits of peaceful nuclear energy for developing countries and did not undermine existing strong nuclear supply conditions.

In both 1985 and 1987, Dr. Dunn also headed the U.S. delegation to the conferences that reviewed the Tlatelolco Treaty, creating a nuclear free zone in Latin America. Both conferences entailed extensive discussion of steps to bring the Treaty into force as well as of the responsibilities of outside powers.

From 1981-1983, Dr. Dunn served as a special assistant on nuclear non-proliferation matters in the Department of State. In the 1970's he was on the professional staff of Hudson Institute, where he worked on national security and foreign policy studies.

Dr. Dunn is the author of Controlling the Bomb, an assessment of policies to contain nuclear proliferation and manage its consequences, and the editor (with Amy E. Gordon) of On-Site Inspection for Arms Control Verification (Lexington Books, Fall, 1989). He has a Ph. D. degree from the University of Chicago.

Senator **Sarbanes**. Mr. Turnipseed.

STATEMENT OF MAX TURNIPSEED, SPECIAL TRADE ADVISOR, CHEMICAL MANUFACTURERS ASSOCIATION, WASHINGTON, DC

Mr. **Turnipseed**. Thank you, Mr. Chairman, and thank you for the invitation for CMA to appear here today to give you our comments concerning chemical weapons proliferation.

On behalf of CMA, I am pleased to present our statement concerning legislation aimed at halting the spread and eliminating the use of chemical weapons. I ask that my full statement be submitted for the record.

Senator **Sarbanes**. It will so be included.

Mr. **Turnipseed**. CMA strongly supports the adoption and implementation of an effective multilateral regime to control chemical weapons materials. CMA's position on the use of chemical weapons can be summarized as follows:

CMA and its member companies strongly support efforts by the U.S. Government to halt the spread of chemical weapons.

CMA strongly supports the Geneva negotiations going on toward a global ban on chemical weapons, and certainly would support the comments just stated by Mr. Dunn in that regard. We have been working with U.S. Government officials for over 10 years in that regard to help in a technical way, to address the chemical weapons issue.

The primary objective of the United States Government should be a strong and effective multilateral regime to control chemical weapons materials, equipment and supplies, and we submit that unilateral controls will detract from that goal.

The existing U.S. export control system constitutes the single-most restrictive program in the world today. Additional unilateral regulatory controls, particularly that unduly restrict legitimate business or impose competitive disadvantages, are neither warranted nor necessary.

CMA member companies fully support President Bush's stated intention, as Mr. Dunn reminded us, of a complete and total ban on chemical weapons.

The existing system of U.S. export controls on materials having chemical weapons applications is reasonably well designed and comprehensive in scope. Our export regime constitutes the single-most restrictive national system now in effect.

Although some fine-tuning of a U.S. system may be needed, CMA is convinced that a more restrictive U.S. regime would help prevent the further proliferation of chemical weapons materials only if countries with significant potential chemical weapons manufacturing capabilities participate in those new restrictions.

Let me give you an example. Currently there is a list of 40 chemicals on the so-called Australia list, and of those 40 only 10 are controlled by the countries that are members of that group. The United States already has controls on all 40 of those, and four others are proposed to be added to that list.

It is very difficult to get a handle on production and distribution of chemicals. Just to give you a little better feel for that, I just took three chemicals off of the top 10, those 10 that are controlled by the countries of the Australia Group, including United States.

Phosphorus trichloride, for example. There are 27 producers in the Free World of that material, including 7 of them in the United States, 9 in Europe and 3 in Japan. The total production of that one chemical is over 700 million pounds a year. But, interestingly, only 7 million pounds are exported from the United States. So you can see where the controls on these chemicals need to be carefully thought out. For thionylchloride a similar situation, 17 producers in the Free World, including 3 in the United States, 9 in Europe and 3 in Japan. There are very minimal exports of that product. Trimethyl phosphite, 8 producers, including 3 in the United States, 2 in Europe and 1 in Japan.

The point of this is that obviously the chemical industry, as many other industries are, is global in nature and nonproliferation controls need a global approach.

New unilateral or extensive sanctions for violations of U.S. export control laws may well have no positive effect on chemical weapons proliferation. CMA has actively supported the United States for over 10 years and its member companies representatives have worked closely with U.S. officials on the technical issues relating to such a ban.

We will be participating in the International Joint Industry Conference scheduled for September in Canberra, Australia. We have consistently advocated measures that effectively prevent diversion of legitimate chemical shipments to illegal purposes.

Policymakers at the national and international levels need to understand that chemical weapons technology is relatively unsophisticated, as earlier witnesses have pointed out. It's virtually impossible to identify equipment which is specifically designed or modified to be capable of chemical weapons manufacturing. Any nation with the technical resources needed to manufacture such chemicals as fertilizers, pesticides or pharmaceuticals can, given the political will, achieve chemical weapons capability.

CMA believes that the focus of this hearing, the possible need for more stringent sanctions for violation of export controls on chemical materials, is critically important, however. The United States should properly play a leading role in developing effective sanctions against violators.

The effectiveness of unilaterally imposed sanctions, however, is inextricably bound to the success of other efforts. For example, the progress that has been made in the Geneva Negotiations on Chemical Weapons Convention should be give serious consideration. Additional export controls such as those encouraged by the Australia Group will prove effective in controlling chemical weapons proliferation.

Integration of domestic controls into a multilateral approach creates the best opportunity for meaningful regulation of chemical weapons materials. In that regard CMA would support Senator Heinz' earlier suggestions and believe that all of the points he suggested certainly require very serious consideration.

Our full statement focuses on the current chemical weapons legislative proposals, but I'll just touch on a few of the points made in our full statement.

A number of bills have been introduced in both the House and the Senate to restrict the proliferation of chemical weapons and biological weapons. At least three bills are currently pending in the Senate, and one of those bills, S. 8, introduced by Senator Dole, is pending before this Committee.

Although CMA's comments are primarily addressed at S. 8 and S. 195, Senator Pell's bill, we note that one proposal, S. 238 would suspend the patent rights of persons found to be illegally transferring chemical weapons. In CMA's view, this is the type of sanction that is inappropriate and could undermine the U.S. patent system. This attempt to expand the range of sanctions for violation of U.S. law may well cause serious political friction with our U.S. allies.

If the Congress considers additional export controls on chemical weapons materials outside the context of reauthorizing the Export Administration Act, particular attention should paid to the scope and effectiveness of the legislation. CMA will work in any way we can to be helpful in such legislative efforts.

S. 8, for example, would apply sanctions to the illegal export of so-called super-toxic lethal chemicals. The Geneva negotiators in the Conference on Disarmament, however, have already effectively rejected the concept of super-toxic chemicals as a class of materials for control under the proposed treaty.

CMA also suggests that special care be taken to apply controls and sanctions to dual-use materials, as legitimate trade in these materials could be adversely affected. Indeed, more extensive unilateral controls on dual-use materials will be ill-advised given their greater international availability.

As currently drafted, S. 8 would apply sanctions against any parent or successor company of a sanctioned company. CMA believes that an exclusion similar to that contained in existing law, the Export Administration Act, should be considered so that sanctions would apply only when the parent, affiliate, subsidiary or successor entity knowingly violated the export control regulation. The use of this knowing standard should result in a more effective and fair assessment of the penalties for violations.

Other aspects of these legislative proposals merit further consideration, but CMA will not comment on those directly in our statement here today, but we will look forward to working with the Congress and this Subcommittee as that legislation is considered.

Again, CMA's position on existing export controls is that the system is working pretty well right now in the U.S. The problem is that other countries, particularly those in the Australia Group, are not anywhere near the regime that we are, and that needs to be improved.

CMA strongly believes that action on a multilateral basis, first with our Western allies and then with others, is more likely to provide positive restraints on chemical weapons proliferation.

A summary of CMA's actions and future steps planned to contribute more effectively to export control implementation include:

Continuing encouragement and assistance to help our member companies have voluntary internal administrative systems in place to implement the controls and future proposals.

An industry educational program that we have outlined in our written statement.

Increased vigilance against attempted improper export transactions. Our member companies are stressing to their personnel the need for increased vigilance concerning attempted improper export transactions.

CMA is serving as a clearing house to supply export control information for our member companies.

We are providing assistance to appropriate U.S. Government officials in identifying potential diversion situations. We recognize that the U.S. Government has limited resources available for attempting to detect and stop attempts at diverting U.S. origin materials to chemical weapons manufacturers.

For that reason, CMA has established a dialogue with the enforcement officials in the U.S. Government. Our members are aware of this communication link and are utilizing it from time to time in alerting U.S. Government officials to potential problems.

CMA member companies are prepared to explore a means for making this channel somewhat more formal. It would be our suggestion that some thought be given to the formation of a Technical Advisory Committee jointly sponsored by possibly the Commerce Department and State Department. As many of you know, there are many other Technical Advisory Committees currently advising the government, but we do not have one on this particular subject, an area that we feel is lacking.

And, finally, we are continuing our international industry cooperation in helping to prevent diversion and encouraging the education through working with our counterpart associations in Western Europe, Canada, Australia and Japan.

Finally, Mr. Chairman, we believe appropriate unilateral sanctions for violations of the existing U.S. export laws should be designed to encourage multilateral negotiation. In that regard, certainly there does exist some authority under the national security provisions to exercise sanctions, and we believe those should be exercised and should be extended to not only the producers of these items, but to the distribution network where we feel there is a real gap in the current application of those rules.

Thank you, Mr. Chairman, that completes my statement this morning.

Senator SARBANES. Well, thank you very much, Mr. Turnipseed.

[The prepared statement of Max Turnipseed follows:]

CHEMICAL
MANUFACTURERS
ASSOCIATION

WRITTEN STATEMENT OF

MAX L. TURNIPSEED

SPECIAL TRADE ADVISOR

ON BEHALF OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL
FINANCE AND MONETARY POLICY

SENATE COMMITTEE ON BANKING, HOUSING AND URBAN AFFAIRS

HEARINGS ON CHEMICAL
WEAPONS CONTROL LEGISLATION

June 22, 1989

2501 M Street, NW 202-887-1100
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I. INTRODUCTION

Good morning. My name is Max Turnipseed. I am the Special Trade Advisor for the Chemical Manufacturers Association, where I have responsibility for matters such as the Uruguay Round of the Multilateral Trade Negotiations, EC 1992, and export control matters. I am on loan to CMA from the Ethyl Corporation, where I have worked in the international trade area for 15 years. At Ethyl, I have significant responsibility for coordinating and implementing the export compliance program that the company developed. I will address the chemicals weapons and export control issues before you today based on my first hand experience with Ethyl, as well as from the perspective of CMA's policies on the export of chemicals with possible weapons applications.

CMA is pleased to submit this statement concerning legislation aimed at halting the spread and eliminating the use of chemical weapons (CW). CMA strongly supports adoption and implementation of an effective, multilateral regime to control CW materials.

CMA is a non-profit trade association whose member companies represent 90 percent of the productive capacity for basic industrial chemicals in the United States. CMA's members are manufacturers, exporters, and importers of industrial chemicals, and consequently have an interest in proposed legal constraints which may affect their legitimate business activities.

CMA's position on the use of chemical weapons and the need for proliferation control measures can be briefly summarized, as follows:

- CMA and its member companies strongly support efforts by the U.S. government to halt the spread of chemical weapons.
- CMA strongly supports the Geneva negotiations toward a global ban on chemical weapons, and has been working with U.S. government officials toward that end for over ten years.
- The primary objective of the Untied States Government should be a strong and effective multilateral regime to control chemical weapons materials, equipment, and supplies. Unilateral controls will detract from that goal.
- The existing U.S. export control system constitutes the single most restrictive such program in the world. Additional regulatory controls (particularly those imposed unilaterally) that unduly restrict legitimate business, and impose a competitive disadvantage, are neither warranted nor necessary.

I will expand upon each of these points in my testimony today.

II. SUMMARY OF CMA POSITION

CMA's member companies fully support President Bush's stated intention to achieve a "complete and total ban on chemical weapons." The existing system of U.S. export controls on materials having CW applications is reasonably well designed and comprehensive in scope. Our export regime constitutes the single most restrictive national control system now in effect. Although some fine-tuning of the U.S. system may be needed, CMA is convinced that a more restrictive U.S. regime would help prevent the further proliferation of CW materials only if all countries with significant potential CW manufacturing capabilities participate in the new restrictions. New unilateral or more extensive sanctions for violations of the U.S. export control laws may well have no positive effect on CW proliferation. We will detail a number of recommendations to enhance the practical effectiveness of the sanctions proposals currently under consideration in Congress.

CMA and its member companies are strongly opposed to the use of chemical weapons. We have actively supported the efforts of the United States government to negotiate a multilateral ban on chemical weapons. For over ten years, CMA and member company representatives have worked closely with U.S. officials on the technical issues relating to such a ban. CMA representatives will also participate in the September, 1989 International Joint Industry-Government Conference on CW issues, to be held in Canberra, Australia.

CMA is very involved in domestic proliferation control efforts, by providing assistance to government officials who develop and enforce U.S. export control regulations. Our Association has been working closely with both the Congress and the Drug Enforcement Administration in the development and implementation of the Chemical Diversion and Trafficking Act of 1988, which is aimed at preventing illegal drug manufacturing. The chemical industry has consistently advocated measures that effectively prevent diversion of legitimate chemical shipments to illegal purposes.

Policymakers at the national and international levels need to understand that chemical weapons technology is relatively unsophisticated. It is virtually impossible to identify equipment which is specifically designed or modified to be capable of chemical weapons manufacturing. Any nation with the technical resources needed to manufacture fertilizers, pesticides, or pharmaceuticals can, given the political will, probably achieve a CW capability.

Legislation introduced in the Senate would attempt to sanction other governments that permit their business enterprises to export precursor chemicals to countries believed to be engaged in chemicals weapons manufacture. The legislation would also attempt to impose sanctions on foreign business enterprises. In CMA's view, expanding the range of sanctions for violations of U.S. law will prove ineffective, and may cause serious political friction with U.S. allies. Thus, the legislation could actually hamper international control efforts. If Congress wants to consider additional export controls on CW materials, outside the context of the upcoming debate on reauthorization of the Export Administration Act, particular attention should be paid to the scope and effect of such legislation.

The legislation now before the Congress may divert attention from what should be the principal policy objective of the U.S. government. We believe that more -- much more -- can be achieved through multilateral cooperation than unilateral controls or threats of sanctions. The United States should not adopt measures that will lead inevitably to disagreements about national sovereignty and the extraterritorial reach of U.S. law. As the House Committee on Science, Space and Technology concluded in its review of U.S. export controls,

> . . . disparities between the U.S. and other nations in the enforcement, compliance, and interpretation of export controls have placed U.S. industries at a competitive disadvantage with respect to foreign producers. As a result, the central issue is the pursuit of ways for enhancing international cooperation for a strengthened multilateral export control system.
>
> The need to remove these disparities, combined with the recognition of the global economy within which U.S. industries compete, requires a strong and uniformly-administered multinational export control system. Hence, the U.S. must place priority on developing and supporting an effective multilateral control system. Committee Print, 101st Cong., 1st Sess, Serial A at 1 (Feb. 1989).

CMA and its member companies are committed to assisting Congress and the Administration in achieving the goal of an effective global ban on chemical weapons.

CMA believes that the focus of this hearing -- the possible need for more stringent sanctions for violations of export controls on CW materials -- is critically important. The United States should properly play a leading role in developing effective sanctions against violators. The effectiveness of unilaterally imposed sanctions, however, is inextricably bound to the success of other efforts. For example, progress has been marked in the Geneva negotiations on a chemical weapons convention. Additionally, export controls such as those encouraged by the "Australia Group" may well prove effective in controlling CW proliferation. Integration of domestic controls into a multilateral approach creates the best opportunity for meaningful regulation of CW materials.

Although our testimony focuses on the legislative proposals, we want to provide some useful background on CMA's activities in both the domestic and international non-proliferation effort. We also detail some of the steps CMA and its members have voluntarily initiated to promote compliance with current U.S. export control programs.

III. CHEMICAL EXPORTS AND EXISTING CONTROLS

Chemicals are a significant factor in this Nation's overall trade picture. In 1988 our industry accounted for more than $12 billion in trade surplus, a significant contribution to the overall international competitiveness of the United States. Shipments of chemicals and allied products in 1988 amounted to $239.7 billion, of which 13.5 percent were exports. To CMA's knowledge virtually all of those exports were conducted strictly in accordance with U.S. laws and regulations.

For many years, the Department of State and the Department of Commerce have imposed export controls on chemicals and products capable of being used in the manufacture of weapons. In fact, existing U.S. export controls are already the most extensive in the free world. As far as CMA is aware, there are few problems related to these regulatory regimes. To our knowledge, the controls have generally not posed difficult interpretative issues for the U.S. industry, except possibly the technical data area. Given the existence of this reasonably well-designed regulatory regime, we doubt that there are many serious problems of potential diversions to proscribed destinations.

In addition to the lengthy list of chemicals controlled under the International Traffic in Arms Regulations, the Department of Commerce recently enhanced the scope of U.S. export controls under the Export Administration Regulations. These controls include specific licensing requirements and prohibitions for shipments to particular destinations, harmonization of controls with NATO and other Western Allies, and implementation of changes resulting from enactment of the Omnibus Trade and Competitiveness Act of 1988. The purpose of these regulations are, in large part, to limit enhancement of the chemical weapons capability of specific countries, such as Libya, Iran, Iraq, and Syria.

Controls on shipments of precursor and essential chemicals used in the manufacture of illegal drugs are parallel to those on CW related materials. CMA urged Congress to enact the Chemical Diversion and Trafficking Act of 1988 (CDTA), which establishes customer identification, recordkeeping, reporting and notification requirements relating to the distribution, import and export of certain chemicals, tableting and encapsulating machines utilized in the manufacture of controlled substances. In January and early February 1989, the Drug Enforcement Administration proposed regulations to implement the new statute. The Act is yet another component of the multiple regulatory regimes with which CMA members must comply.

CMA fully supported the CDTA and opposes the diversion of chemicals to illegitimate drug production. On March 27, CMA submitted comprehensive comments to DEA concerning the proposed regulations. CMA supported the regulations authorized by the statute and suggested changes to proposed requirements that would not contribute to Congress' objective in regulating these shipments.

Generally, violations of the existing export control system are punishable by both civil and criminal sanctions. In fiscal year 1987, the Department of Commerce completed nearly 200 investigations, referred 7 cases to the Department of Justice for criminal prosecution, imposed administrative penalties of over $650,000, denied export rights to 34 parties, and issued 73 warning letters. Willful and knowing violations of the export control regimes are considered criminal acts and may result in fines of up to $1 million, 5 times the value of the exports in question, or twice the illegal financial gain. Individuals face maximum criminal sentences of 10 years in prison.

Available civil penalties include the denial of export privileges. Violations of the Export Administration Regulations are punishable by fines of $100,000 where national security controls are involved, and $10,000 where other controls are involved. Violations of the International Trade in Arms Regulations are punishable by forfeiture of the goods and fines of up to $500,000.

Individuals or corporations found to violate the regulations may also incur costs for the management time, legal fees, adverse publicity, and problems in license processing, cooperation with governmental officials, and shipping. These costs are, of course, in addition to those imposed by an investigation or penalty.

CMA believes that the primary purpose of the sanctions imposed under existing U.S. export control regulations is to deter illegal activity. Yet in view of the ease with which CW agents can be manufactured, the worldwide availability of the technical equipment used for such production, and the level of sanctions now in place, it is difficult to imagine how much more of a deterrent can actually be imposed. Moreover, it is useful to look at the record of past violations as a gauge for the need -- and the efficacy -- of additional controls. In recent testimony before the Senate Governmental Affairs Committee, for example, U.S. Customs Commissioner von Raab stated his belief that very little in the way of illegal exports actually leaves U.S. jurisdiction. In short, the system is working.

Few violations have involved U.S. chemical companies. In CMA's view most U.S. companies avoid the "quick profit" that might be available in a sale destined for CW uses. Most importantly, the extent to which CMA member companies already have extensive export control systems in place is telling evidence that the current regime works.

IV. U.S. CHEMICAL WEAPONS CONTROL PROPOSALS

To date, a number of bills have been introduced in both the House and the Senate to further restrict the proliferation of chemical and biological weapons. At least three bills are currently pending in the Senate to address the problem of CW proliferation. One of these bills, S. 8, introduced by Senator Dole, is pending before this Committee. Although CMA's comments are primarily addressed to S. 8 and S. 195 (Senator Pell), we note that one proposal, S. 238, would suspend the patent rights of persons found to illegally transfer chemical weapons materials. In CMA's view, this type of sanction is inappropriate, and could undermine the U.S. patent system. The attempt to expand the range of sanctions for violations of U.S. law may well cause serious political friction with U.S. allies. Consequently, the need to promote a multilateral control regime, and the competitive needs of U.S. industry, may not be adequately balanced.

The three Senate proposals would control a list of chemicals, biological materials, equipment and technical data which could assist in the production and delivery of chemical weapons. Under both S. 8 and S. 238, the Executive Branch would develop the list, presumably with the advice of private industry. The proposals would prohibit the shipment of any item on the list to Iran, Iraq, Syria, Libya or other country determined to be pursuing or expanding a CW capability. Mandatory sanctions would be imposed against countries using chemical or biological agents in violation of international law, or companies who aid such countries in acquiring a weapons capability in violation of U.S. law. Sanctions would apply to the entity violating the law, as well as affiliated companies. Senator Pell's bill, S. 195, would impose automatic sanctions against countries found to have used chemicals weapons.

Limited waivers or exceptions are available under the bills. Under S. 8 and S. 238, comprehensive reports on foreign efforts to acquire CW capability and an assessment of that capability would be prepared. The reports would include lists of each company, foreign or domestic, which has aided or abetted an effort to acquire or enhance a CW capability. S. 195, by contrast, would require reports on the efforts of developing countries to acquire CW materials and technology.

If Congress considers additional export controls on CW materials, outside the context of the reauthorization of the Export Administration Act, particular attention should be paid to the scope and effectiveness of the legislation. S. 8, for example, would apply sanctions to the illegal export of the so-called "super-toxic lethal" chemicals. The Geneva negotiators in the Conference on Disarmament, however, have effectively rejected the concept of "super-toxic" chemicals as a class of materials for control under the proposed treaty. CMA also suggests that special care be taken in applying controls and sanctions to dual-use materials, as legitimate trade in these materials could be adversely affected. Indeed, more extensive unilateral controls on dual-use materials may be ill-advised given their greater international availability.

As currently drafted, S. 8 would apply sanctions against any parent or successor company of a sanctioned company. CMA believes that an exclusion similar to that contained in existing law (Export Administration Act -- 50 U.S.C. App. § 2410a(d)) should be considered, so that sanctions would only be applied when the parent, affiliate, subsidiary, or successor entity knowingly violated the export control regulation. Use of this "knowing" standard should result in more effective and fair assessment of penalties for violations.

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In CMA's view, S. 195 promotes a cooperative approach in controlling the acquisition of CW materials and technology by those countries most likely to see a benefit in using chemical weapons. International means of monitoring and reporting on commerce in CW materials, and the means for taking action to enforce international sanctions, are exactly the types of controls CMA has promoted in the Geneva negotiations.

CMA is pleased to note that S. 8 would continue the current system under the Export Administration Act (50 U.S.C. App. § 2405(c)) of consultations with the affected industries and appropriate advisory committees to the Department of Commerce on proposed export controls. Additionally, CMA is encouraged by the clear mandate of both the Dole and Pell legislation to encourage multilateral negotiations through the "Australia Group" and the recently concluded Paris Conference. CMA is convinced that a multilateral approach is the only way to effectively halt global proliferation in chemical weapons.

Other aspects of these proposals also merit careful consideration, although CMA will not comment on them directly in this statement. Rather, we look forward to a continuing dialogue with the Committee as legislation is considered.

Again, in CMA's view the existing export control system works well. Some fine-tuning -- such as clarification of the existing controls governing technical data -- may be necessary, but extensive changes are not required. CMA strongly believes that action on a multilateral basis, first with our Western Allies and then with others, is more likely to provide positive restraints on CW proliferation.

V. GENEVA NEGOTIATIONS ON A GLOBAL CHEMICAL WEAPONS BAN

As stated earlier, CMA has strongly supported the negotiation of a treaty banning the production and possession of chemical weapons. Our Association has worked for over ten years with the United States Government on such a treaty and related issues. Our cooperative effort and internal Association policies are coordinated through the Chemical Weapons Work Group. This Work Group has met regularly with officials from all the agencies involved in the ongoing Geneva negotiations, including the Arms Control and Disarmament Agency, the Departments of Defense, State and Energy, the Joint Chiefs of Staff, and the intelligence community.

CMA has also cooperated in this activity with the trade associations that represent chemical manufacturers in other nations. These include: the European Federation of Chemical Manufacturing Associations (CEFIC), representing 17 national trade associations; the Japanese Chemical Industry Association (JCIA); the Canadian Chemical producers Association (CCPA); and the Australian Chemical Industry Council (ACIC).

There are several important issues being considered in the context of the proposed treaty. For example, our members are concerned about the protection of proprietary information under the proposed treaty regime. Our Work Group has also expressed reservations about the effectiveness, intrusiveness and high cost of any routine inspection system for facilities that manufacture and use precursors to chemical weapons agents. We have suggested effective methods for verifying treaty compliance, helped the government test those methods during a recent National Trial Inspection, and are assisting in arranging another National Trial Inspection.

In addition, our members have opposed extending the proposed reporting and inspection requirements under a chemical weapons treaty to plants "capable" of producing "super-toxic" chemicals. This extension would vastly increase the universe of facilities subject to the treaty and would greatly raise the verification cost with little gain in achieving the treaty's objectives. These cautions about potentially burdensome regulation arise equally in considering the appropriate level of export controls for chemicals and related technical data and production equipment.

Finally, CMA has been asked to participate in the joint government-industry conference on CW control issues, to be hosted by the Government of Australia in September of this year. CMA looks forward to the conference as a multilateral effort to reaffirm and broaden the commitments achieved during the recent Paris Conference.

VI. CMA ACTION AND FUTURE STEPS CONTRIBUTING TO MORE EFFECTIVE EXPORT CONTROL IMPLEMENTATION

CMA member companies have for many years maintained internal administrative systems to implement their export control obligations ranging from classifying products to determine the level of controls to applying for validated export licenses. In light of the recent U.S. government emphasis on chemical exports and the increased controls to certain countries, many companies have voluntarily taken action to enhance the effectiveness of the U.S. governmental programs designed to prevent the spread of chemical weapons. The following describes the measures already implemented and the additional measures which are planned.

a. Industry Educational Programs

A strong consensus exists within our industry on the importance of enforcing the existing controls designed to prevent CW proliferation. Some member companies and their personnel are facing the increased attention that inevitably results from an increased level of controls and heightened public concern, particularly given the recent events in Iraq and Libya.

For these reasons, we have initiated and encouraged our members to carry out educational programs that will explain the current control regime and suggest procedures and practices for achieving compliance in companies. We involve both technical and legal experts in these programs. Recently, CMA conducted a successful one-day seminar on the emerging domestic and international CW controls. Representatives of the chemical industry and the U.S. government participated in this effort.

These educational efforts may lead to modifications in the procedures and practices that U.S. companies apply in implementing their internal export control programs. As already noted, many CMA member companies already have comprehensive compliance programs in place. We expect that these types of programs will do much to enhance compliance and that they are more productive than threats of additional sanctions.

b. Increased Vigilance against Attempted Improper Export Transactions

Our member companies are stressing to their personnel the need for increased vigilance concerning attempted improper export transactions. Thus, CMA members are acquainting their employees with the kinds of information that raise suspicions about transactions and that require further inquiry and possibly consultation with U.S enforcement officials as well as advice from legal counsel. This vigilance not only serves to prevent diversion of precursor chemicals, but its existence also deters those who might attempt such improper conduct.

c. CMA to Serve as a Clearing House in Supplying Export Control Information for Member Companies

Because of CMA's dealings with the responsible U.S. government agencies, CMA performs the function of a clearing house for information that may assist member companies in achieving export control compliance. We are regularly informing our members of developments in Washington ranging from proposed regulatory changes to potential diversion threats. Our staff and counsel are available to assist with in-company programs by providing materials and, in appropriate cases, taking part in educational sessions.

d. Assistance to U.S. Government Enforcement Officials in Identifying Potential Diversion Situations

CMA members recognize that the U.S. Government has limited resources available for attempting to detect and stop attempts at diverting U.S.-origin chemicals to CW manufacture. For that reason, CMA has established a dialogue with enforcement officials in the U.S. Government. Our members are aware of this communications link and will utilize it from time to time in alerting U.S. Government officials to potential problems. CMA member companies are prepared to explore a means for making this channel somewhat more formal, such as through formation of a technical advisory committee jointly sponsored by the appropriate government agencies.

e. International Industry Cooperation in Preventing Diversion and Encouraging Education

As previously noted, CMA works closely with its counterpart organizations in Western Europe, Canada, Australia and Japan. We have begun to encourage those organizations and their members to initiate educational programs along the lines of those which we have undertaken in the United States. We expect to continue our cooperative efforts with a view to establishing inter-organizational programs that will promote compliance and discourage attempted diversions of CW chemicals.

V. CONCLUSION

The former Australian Ambassador to the United States, Rawdon Dalrymple, has concisely stated the positive developments and continuing concerns in the CW debate:

> . . . one outcome of the coordination work on the chemical weapons convention and export controls has been to stimulate dialogue between governments and within countries, which is part of the long process of building and reinforcing political norms. But the spread of chemical weapons is an urgent problem. Some would claim that export controls have not been a success -- just look at Libya. To which we respond that the very nature of chemicals and the chemical industry -- the ease with which mustard gas can be made, for instance -- mean that legislative controls cannot and should not be a substitute for responsibility. Responsibility, that is, based on self-interest in realizing that chemical warfare is a game in which there are no winners in the long term.

The Chemical Manufacturers Association has recognized its responsibility in controlling CW proliferation. We actively support a global ban on chemicals weapons. We are working for continuing development, clarification and complete implementation of domestic export controls. And we encourage multilateral action that involves the governments and industries of our major trading partners.

Appropriate unilateral sanctions for violations of the existing U.S. export control laws should be designed to encourage multilateral negotiation. Ultimately, competitive and legitimate business concerns can only be addressed in an effective global system for restricting chemicals weapons production, proliferation and use.

Senator **Sarbanes**. First of all, I want to thank all three members of the panel for very helpful statements, and behind those statements very carefully worked out and thoughtfully prepared statements. They will be of enormous use to the Committee, and we are very appreciative of the work that went into them.

In fact, Mr. Turnipseed, I have to say that I'm not sure I agree with all your conclusions, or at least in my mind they are open to debate, but this is a very carefully prepared statement, and it's a very careful analysis of the issues, and we are very appreciative to you and to Mr. Dunn and Ms. Harris.

I don't want to go back to the first panel, but they could have used a briefing, I think, from the three of you before they came here this morning. [Laughter.]

Let me try to get some distinctions here.

First of all, sanctions towards countries and sanctions towards companies are contained in the two bills, or the more than two bills that are before us, but what is the difficulty that any of you would see with sanctions against a country that has used chemical weapons?

Let me state at the outset that I agree with the proposition that if you can achieve it, you want a multilateral framework. If we can get all countries to agree on a strong regime, et cetera, that's obviously much to be desired and, therefore, these negotiations in Geneva and the work of the Australia Group and so forth are extremely important and they need full U.S. backing in every respect.

But there are "buts" over that, and we don't know whether it's going to be achieved, when it will be achieved, or how rigorous the standards are that can be achieved. So there is a responsibility to consider taking individual country action, as the Congress is doing here, both for the impact that would have, for the leadership it might show, and the impetus it might provide to the efforts to develop an international regime.

Now what problem is connected with applying sanctions to a country that has used chemical weapons so that it's clear that it can't do this and simply get away with it? I guess Iraq is the actor in this instance.

Could the three of you address that.

Mr. **Turnipseed**. Well, let me just say, first of all, Senator Sarbanes, that we do support sanctions against countries. We think that is more appropriate than against companies. Certainly that would encourage a country, I would hope, to take the appropriate steps to get the right controls into place, whereas if the sanctions were against companies, particularly on a unilateral basis, that would only shift the potential from one company to another, possibly within that same country. Again, there is existing authority in the national security area to apply sanctions to companies if we so desired.

Mr. **Dunn**. Mr. Chairman, I think that several arguments would be made against sanctions.

One argument would be that applying sanctions after the fact will not reverse an action that has already occurred.

A second argument that I think would be made against applying sanctions to a country that had used chemical weapons would be that it probably would not turn the country around, lead it not to use chemical weapons again.

A third argument that probably would be used would be that it would make it harder to use diplomacy to end the conflict.

And a fourth argument that probably would be made would be that the sanctions would be too weak because you would need to get virtually all countries lined up to support them.

I think if one looks at the record, Senator, the actual imposition of sanctions, whether we are talking about sanctions against Italy back in the days of its invasion of Ethiopia in the mid-30's or whether it's sanctions against Rhodesia in the 60's and 70's, the record is that when you apply sanctions, it hasn't had a major impact.

But at the same time, it seems to me, in this area of chemical weapons use, there are important arguments for sanctions against countries that use chemical weapons.

First, it may have an impact upon whether the country uses chemical weapons again. What we see with chemical weapons use is that it is repeated. The Iraqis used chemical weapons and not much happened to them. So they decided, well, let's use chemical weapons again, and then they used chemical weapons again, and ultimately they used it against their own people.

So that in contrast to where you're trying, for example, to get Mussolini to pull out of Ethiopia, you're trying to influence a more discrete piece of behavior, getting a certain weapon not to be used.

So I think the response would be that even if it is after the fact, it could well be before the next fact, before they use them again. And I think looking at past experience, the threat to impose sanctions on a country has had some influence.

Second, with regard to the types of arguments that normally would be made against applying sanctions to a country that had used chemical weapons, as Elisa Harris pointed out, there are countries around the globe now thinking about acquiring chemical weapons. The number has jumped, and most people agree that's because the Iraqis used chemical weapons successfully. So to make a country pay a price does send an important signal to others around the world asking themselves, do we want these weapons or not?

The final point that I would make is that if one looks at the actual attempt to make a country pay a price for using chemical weapons, it turns out in many instances that you don't need to obtain the support of dozens or even more countries. It usually is the case that with most of these countries there will be a handful of countries that are key trading partners and key allies. If you can get them on board, you have a real multiplier effect in terms of what sanctions can do. So sanctions need not be a weak and futile gesture, if you can line up three or four supporters in many cases.

Senator SARBANES. Ms. Harris, before you respond, let me just pick up on that last point, because I have a question for her, and maybe you can encompass this into your response as well.

It seems to me that we tend not to shade this thing enough. We think, well, we're going to have a multilateral arrangement that will embrace everybody, which is the best of all worlds in what we are trying to get, or the United States goes off on a unilateral path. I mean they are not inconsistent, because I happen to think that perhaps going down the unilateral path in a way supports the multilateral effort, or if it is done skillfully can do that.

But there is also the possibility that the United States acts unilaterally and then seeks to draw in three or four or five other countries to do the same.

I mean suppose all the G-7 countries at their summit came out of that summit and they had agreed to their own program as an interim step towards a worldwide multilateral effort. I mean you're now talking about the leading industrial powers and major trading nations, and that might have a very sharp impact.

I take it your reference was to look at the country and its immediate trading partners and try to draw them into it, and that's but another refinement of this.

Ms. Harris, why don't you address those issues.

Ms. **Harris**. Mr. Chairman, I think you are absolutely right. The choice isn't between unilateral measures on the part of the United States or a multilateral approach, but the two can be pursued simultaneously and they complement one another.

I would just like to add a few things to what Lou Dunn has said.

First of all, in terms of why there might be objections to sanctions against countries that use chemical weapons. It seems to me that one——

Senator **Sarbanes**. I'm positing that the country has used the chemical weapons, that they have gone ahead and done it, and my question is what's done about that, or do they do it, achieve their objectives and get away with it, which it seems to me leads them to think well, we'll do it again, and leads other countries to think that well they did it and got away with it, why shouldn't we do do it and we'll probably get away with it.

Ms. **Harris**. I agree, Mr. Chairman. It seems to me that if we don't take firm action against countries that use chemical weapons, that will tell other countries that it's all right for them to do the same thing. They can develop chemical weapons and they can use them if they find themselves in a tight military situation.

So we have a very clear political message that we're sending to other countries by adopting legislation that would impose sanctions against users of chemical weapons. It will deter the future Iraqs.

But I also think that this legislation could have a very real military impact. And, again, if you go back to the Gulf War, you can see where this might have worked.

Iraq was very, very dependent on foreign supplies for conventional armaments, and two of its largest suppliers were France and Saudi Arabia. If those two countries had said to Iraq in 1984, when the UN confirmed that chemical weapons were being used by Iraq, that we support your war aims, but we cannot allow you to continue to use chemical weapons, if they had posed the choice to Iraq to either stop using chemical weapons or face a cut off of conventional military assistance, I personally believe that Iraq may have been persuaded to stop using chemical weapons for the remainder of the war.

But that didn't happen, and instead, as Lou Dunn has suggested, Iraq continued to use chemical weapons not only against Iranian military forces, but ultimately against its own population.

So it seems to me that if we and our allies and friends work together and are prepared to impose economic and, more importantly, military sanctions against these countries, it may have a very definite impact on whether chemical weapons continue to be used in conflicts.

One final point I would want to make concerns why there might be objections to sanctions against users.

It seems to me the primary reason why we did not impose sanctions against Iraq during the Gulf War was because we had other overriding foreign policy interests, particularly an interest in not seeing Iran victorious in that conflict. And because of that, this country and the rest of the international community sat back and allowed Iraq to continue to use chemical weapons.

So overriding foreign policy interests may be another reason, in my view, why countries may be reluctant to impose sanctions against users.

Senator **Sarbanes**. Well, partly that's because you see the price you're paying in the short run in the particular conflict in terms of a calculation of your interests, but fail to calculate very carefully the broader, longer-run price you're paying for in effect letting the genie of chemical warfare out of the bottle.

Ms. **Harris**. That's absolutely right. It's short-term interests in not seeing an Iranian victory versus long-term interests in trying to stop the proliferation and future use of chemical weapons.

Mr. **Dunn**. Mr. Chairman?

Senator **Sarbanes**. Yes.

Mr. **Dunn**. If I might add two points.

I think one of the advantages or benefits of sanctions legislation on the books is that it forces the bureaucracy itself to look beyond the short-term interests which always dominate in some sense.

The second point that I would like to make is to pick up on your point about the Group of Seven. It seems to me as one thinks of different types of measures that fit under this category of sanctions, we should remember that President Mitterrand at the United Nations last fall suggested that countries should agree to impose economic and other sanctions for the use of chemical weapons.

It would seem to me that one item that might very well be pursued as part of the Williamsburg Summit agenda would be a common statement by the Williamsburg Seven in which they would not necessarily speak about a particular set of sanctions, but they would just indicate that as far as they were concerned, the use of chemical weapons would have serious political and economic consequences.

It would also seem to me that this type of a statement, if we are thinking about ways to buttress the presumption against the use of chemical weapons, the presumption that you can't do it and get away with it for free, this would be something that could usefully be taken up by the President when he finally meets with President Gorbachev, again a statement by the two of them sending this signal along with other signals.

Senator **Sarbanes**. Now let me turn to companies. What is the problem that you see if the United States, if the Congress passed legislation that said you're a company that provided this chemical weapons capacity, assuming you can establish that, and let's get beyond the hurdle of whether they really did it or not, and therefore we are not going to procure from you, you can't sell anything to the U.S. Government, and we are not going to allow your imports to come into the United States. You're not going to be able to export to our country, and that at least we can control. I don't see any extraterritoriality involved in that type of sanction.

What is the problem with that?

Mr. DUNN. I think the main problem that people would cite would be the problem of reducing foreign policy flexibility and the problem of disputes with other governments. But to my mind, it would send an important message to other companies, and it would make some companies think quite carefully about the type of export behavior that they would engage in.

I think it would be important to have some type, as the bill tries to do, some type of provision so that a company couldn't simply set up a kind of dummy company somewhere and do all of its activities through the dummy company. So there has to be some coming back up the chain, whether its knowing or nonknowing.

But to my mind I think it's a step that could usefully be taken, which would make a difference.

Ms. HARRIS. I agree, Mr. Chairman. I think it's important that we put industry on notice right now that we are not going to tolerate these activities any longer, whether they are U.S. companies or foreign companies.

At the same time I think it's imperative that we impose the same penalties and sanctions on U.S. and foreign firms. So if U.S. contracts are going to be denied, they should be denied to U.S. companies as well as foreign companies.

Senator SARBANES. If they engage in that kind of activity.

Ms. HARRIS. Exactly. If foreign companies are going to be denied the right to export to the United States, U.S. companies ought to be denied some sort of export activities out of the United States to other countries.

My only concern with the sanctions against companies that provide this material is that this legislation not even appear to be protectionist because, if that is the case, then other countries and companies won't take these efforts seriously. So we have to be balanced and impose the same penalties on our own firms that we are seeking to impose on foreign companies.

Senator SARBANES. Let me just follow up on that point very briefly. It's my impression, however, that from that point of view, we approach this problem with clean hands in terms of contrasting the behavior of our companies with the behavior of companies in other countries. Would you generally agree with that, or do you think we have problems that we need to address?

Ms. HARRIS. Well, it's very difficult to know whether our export controls are being effective. I mean we only know that there is a problem when it hits the front page of the New York Times or the Washington Post. I think many people probably assumed that the German export controls were working just fine until January 1st when there began a series of articles about Imhausen's involvement in the Libyan program.

It's certainly the case that fewer American companies have been implicated in exporting this type of material abroad, far fewer U.S. companies. On the other hand, there may be activities that are taking place that we're simply unaware of.

So I think it's really quite a difficult issue.

Senator **Sarbanes**. Mr. Turnipseed.

Mr. **Turnipseed**. Just a couple of comments, Senator Sarbanes. First, I recall at an earlier hearing on this subject Customs Commissioner von Rabb indicated that as far as he knew, the U.S. did have pretty clean hands in this area. Certainly CMA supports the prosecution of any U.S. company that has violated the law.

Of course, in that regard, there may well be violations that none of us know anything about, but certainly when there is one identified, as you indicated, we ought to apply our law to the letter.

With respect to reaching extraterritorially, I think we are not necessarily opposed to that, but we fail to see the effectiveness of that. Most of the companies that would fall into this category probably have little or no trade with the United States to begin with. So I'm not sure of the effectiveness of such a sanction. Certainly it would possibly send a signal, but I'm not sure that there is much effectiveness there.

Senator **Sarbanes**. Assume it sends a signal and it may have a little bit of effectiveness, what downside is there to doing it? Let's take the Libyan situation. You have a German company, and you say to this company, "Look, you're giving this chemical weapons capacity to Libya, and the least we're going to do is we are not going to buy from you and we are not going to let you export into the United States." Now maybe they neither sell to us or have very few exports, but that proposition has been established and it clearly labels them as a bad actor in an international sense, and it increases the pressure, I would think, within the particular country to sort of address the issue, and it gives some boost to the good actors as opposed to the bad actors within that industry in that particular country. Otherwise, the good actors, the companies that are behaving well in that country, sort of say, well, we're behaving, and I mean they may do it because they simply think it's the right thing to do, but I would take it there is an economic cost that comes with it, and at least this would send some message, and perhaps with it some economic cost to that country.

Mr. **Turnipseed**. Well, again, I guess I would like to think this through a little more and confer with some of our staff on this matter. Again, we are not outrightly opposed to those sanctions and at this moment can't see any major downside, as you point out. However ineffective it might be, certainly it does send a signal.

I would hope, however, that such action would be taken in conjunction with encouraging the country where the company is located, if they do not have in place sufficient regulations to have control, to take the necessary steps as well. That is, if they have national laws that should have dealt with that company, that they be applied and, if they don't, encourage them to put some on the books that would.

Senator, we will think this thing through some more because I know this is a serious debate here, country versus company, and we certainly don't have all the answers at this point either.

Senator **Sarbanes**. Did any of the others want to add anything? Mr. Dunn.

Mr. **Dunn**. I would just add that one of the experiences we had in the nuclear export control area was that it was always difficult to convince other countries not to engage in certain activities as long as they were worried that there would be still other countries and other companies that might do it.

So to the extent that this type of legislation helps to create a broader presumption that companies will not supply these types of items, and to the extent then that that in effect tends to square the playing field, as you suggested, with the good companies and the companies that are most interested as rapidly as possible in making a quick deal, then I think that is a plus. It does deal with the problem, which is the one of always looking over your shoulder and asking well, we are obeying the regulations but what about others? I don't think that's a problem in the United States, but it is occasionally a problem overseas.

Senator **Sarbanes**. Mr. Turnipseed, I wanted to ask you this question, and it's not directly related to some of the sanctions we've been talking about, but I take it a concern of yours on export controls, particularly as you're dealing with precursor chemicals, is, as you said in your statement, they have a dual use. So a company here or anywhere for that matter exports these chemicals and then it develops that they were used, and the company says, Well, you know, how were we to know? These are legitimate items on the market, and let's assume that the amounts and so forth were such that the red warning bell shouldn't have gone off. I gather in one of these instances, and I forget in which instance, it was asserted well, it was a dual-use chemical, but the amounts were so enormous that anyone looking at it would have known that there was strange business afoot here.

But you say we have to have a knowing standard in the law, and I was wondering about whether you ought to have a dual system. There are certain countries that either have used chemical weapons or are clearly trying to get them, and you shift the presumptions there. In fact, you may have to think that when you have a dual-use and they can be used militarily in those limited number of countries, you have to work on the premise that they are going for the wrong purpose.

For the rest of the world, which is the vast number of countries where you don't have this perception that they are trying to develop that capacity, the presumption works the other way and the company in the normal course of business simply proceeds, and there they would really have to have a knowing, I mean a real knowing standard.

Now I know there would be I guess some difficulty in sort of applying that or some concern about it, but it seems to me it might be a way of separating out this problem. So if you're going to sell dual-use chemicals to this handful of countries, you can't have any presumptions. You've got to ascertain that it's not going to be used in a military fashion.

Mr. **Turnipseed**. Well, most of the 40 chemicals that we're talking about here today, Senator Sarbanes, do fall under that sort of a regime. That is, where there is a validated export license required today on almost all of those 40 chemicals to every country, except COCOM and certain other NATO countries. So it does put the burden on the export control compliance people at the Commerce Department to make that determination where there are shipments requested for those countries and to particular companies that might be on their watch list that we don't know anything about in the private sector.

Senator SARBANES. Your problem with that then is that the U.S. applies that to our companies on all 40 items, but the Australia Group is applying it to their companies on only 10 items; is that correct?

Mr. TURNIPSEED. That's correct. That's right.

Senator SARBANES. Well, if the Australia Group broadened the application to all 40 items, that situation from your perception would be evened out; is that correct?

Mr. TURNIPSEED. It would certainly help, assuming proper administration of those rules. Anybody can make a certification that we're going to use this for a legitimate commercial purpose, and if you haven't had any past history with that company within a controlled country let's say, somebody has got to make that decision. So I obviously don't know what those mechanisms are within the Commerce Department, but I assume they have some intelligence from the intelligence community on how to deal with those things.

It has been our experience that they do do a good job at that, and I think, as I noted earlier, the Customs Commissioner found few situations where someone applied for a validated license to be issued, where there was a look at the transaction, and then subsequently we found that there was a problem. That situation just hasn't occurred. It has been those that haven't gone through that system that have created the problem.

Senator SARBANES. Does anyone else want to add anything?

[No response.]

Senator SARBANES. Let me just turn to just one other issue, and that is the automatic applications of sanctions or to put it another way, the Executive discretion. Accepting for the moment the argument that the more serious the transgression, the stronger the argument is for automatic application of sanctions. Appreciating that the Executive always likes to have discretion and that in many instances it's appropriate to have discretion, I guess the question is are there situations that are so clear that the sanction ought to apply automatically so all the pressures that otherwise could go to work to keep the sanction from being used cannot take effect.

Again, I think in my own view the clearest instance of that would be the actual use by a country of chemical warfare to gain its objectives, and whether we ought not to just have the sanction apply or at least have some of the sanctions apply. You could shade how much of them, but have some sanctions apply automatically so you get out of the situation where all of the sudden the President has to go through this major sort of foreign policy analysis and all of the bureaucracy comes in with different considerations again mostly short term and the end result is that it's deplored, but nothing is actually done.

Mr. Harris, why don't you go first.

Ms. **Harris**. Mr. Chairman, I think the perception among companies and countries will be that these sanctions are much more effective if they apply automatically as opposed to being a foreign policy tool made available to the President to use at his discretion.

The President has the power now to impose sanctions of various types and, as we have seen, he has recently done so with respect to China. So he already has that power, and if Congress were simply to reaffirm that, it would not in any way be enhancing the value of the sanctions approach.

It also seems to me to be fairly clear from my reading of the various bills that are pending before the Senate that there is flexibility given to the Administration through various types of waivers and exceptions, and in fact all of the legislation, each bill has either exceptions or waivers for up to 6 months on national security grounds.

So there is a fair amount of flexibility already given to the Executive Branch and, in my view, these sanctions will be seen as much more powerful and serious if they apply automatically.

Senator **Sarbanes**. I think you've made a very good point. I think it's important for people to appreciate that there is a real difference between the sanction going into effect unless the President makes a decision to waive it, and the President being required affirmatively to make the decision in the first instance to put the sanction into place.

Now the end result could be the same, namely, no sanction, but the dynamics of that decision-making are very different if the sanction kicks in and then the President has to waive it as opposed to the President simply having the authority to put the sanction into place.

Mr. Dunn.

Mr. **Dunn**. I think that's quite true, Senator, and I think it would be conceivable in this type of a situation, as you suggest, to treat different types of sanctions differently, to treat the sanctions against use in one fashion and you could conceivably decide ultimately to treat the sanctions against companies in another fashion.

If one looks at the nuclear export control business, there are different types of sanctions that exist in the legislation now. There are clearly automatic sanctions for the use and detonation of a nuclear weapon by a country that does not now have nuclear weapons. And it would seem to me that an automatic sanction for the use of chemical weapons would be appropriate.

I think it also would turn out to be a more workable situation given the dynamics that you point to within any Administration, this Administration, past or future Administrations.

Mr. **Turnipseed**. Just one additional point. I guess on automatic sanctions it's always a little difficult to decide when is the appropriate time to apply that automatic sanction, and the burden of proof is sometimes a little difficult. In the case with the Iran-Iraqi situation I think the real question might still be out on in fact did Iran use chemical weapons. So that question leaves a little question of, well, who makes that decision, and certainly there has to be some flexibility there rather than a mechanical automatic imposition on supposition or on rumored reports or things that might suggest that use was made.

Senator Sarbanes. Well, I think that's a good point, and obviously the judgment that kicks off this whole process has to be a reasoned one based on evidence obviously if you're going to start applying these kinds of sanctions.

Well, you've been an extremely helpful panel. I know it has been a long morning for you, but we are most appreciative to you.

I hope we won't be imposing on you too much in the course as we move along trying to shape some legislation if we have occasion to be in touch with you and call on you for your comments and suggestions and continued assistance.

We appreciate this panel very much.

The Committee is adjourned.

[Whereupon, at 11:50 a.m., the subcommittee adjourned, subject to the call of the Chair.]

Questions for Joan McEntee from Senator Garn
June 22, 1989

Question 1.

The Administration's stated position is to support multilateral approaches to Chemical Weapons control but to endorse unilateral sanctions authority. How can these two positions be reconciled? What is the likelihood that the Commerce Department would recommend imposition of unilateral sanctions, for example against Imhausen?

Answer

The Administration's position is to support bilateral and multilateral approaches to chemical weapons control because they are more likely to be effective. We oppose mandatory and retroactive sanctions because they undercut these approaches and foreclose the exercise of Presidential discretion.

Therefore, it is unlikely that the Commerce Department would recommend sanctions against Imhausen, for example, since such a recommendation would be retroactive and since the Government of the Federal Republic of Germany has strongly and positively responded to U.S. demarches on this issue.

Imhausen is a foreign company in an allied country acting under the constraints of its domestic laws. Sanctions by the U.S. against such companies should be an option of last resort. The objective of U.S. laws and policy should be to prevent chemical weapons proliferation through cooperation with our close allies, as well as other governments. Mandatory sanctions against foreign companies that do not allow for consideration of the laws and enforcement regimes of the host government are likely to be counterproductive.

Question 2.

Sanctions must be threatening to be a deterrent. Is a broadly discretionary sanction, as proposed by the Administration, a real deterrent? Does the Administration oppose the sanctions in S.8 which require imposition of sanctions only to those that _knowingly_ assist Chemical Weapons development?

Answer

The Administration believes that legislation providing the President with additional sanctions authority can contribute to the U.S. policy of seeking to deter CBW proliferation and use. However, the President must have the flexibility to determine on a case-by-case basis the response that is most appropriate for a given situation. In this context, the President should have the flexibility to react to developing circumstances, including:

- determining whether a foreign company has knowingly and substantially assisted in CBW development;

- consulting with the host country about the situation and considering the corrective actions, if any, the host country has already taken;

- choosing from a range of sanctions those that will be most effective in satisfying U.S. policy goals;

- obtaining bilateral and multilateral action (including appropriate sanctions);

- examining the effect that the imposition of sanctions may have on U.S. commercial and other national interests.

A sanction can be a real deterrent only if, when imposed, it is effective. In any given situation that arises, the factors noted above must be evaluated in deciding whether, when and how to apply sanctions in order to achieve maximum effectiveness. Since automatic and mandatory sanctions do not take into consideration these critical factors, they can prove to be ineffective and counterproductive, particularly to the extent that:

- international cooperation to control CBW is jeopardized;

- the host country might view such sanctions as a trade action for U.S. commercial advantage and react accordingly;

- jurisdictional disputes get in the way of solving the problem.

Question 3.

Current U.S. chemical weapons controls do not apply to dual-use chemical equipment and technology, only to 40 precursor chemicals. Yet the clear issue in the case of the Libyan plant was that Western companies had supplied not only controlled items but general support for construction of the plant -- steel-making and chemical producing capabilities. This was all legal activity, even under U.S. law, were it not in Libya. Does this not argue for expansion of U.S. and foreign export control regimes to cover a broader range of items for problem projects in problem countries?

Answer

Controlling broad ranges of dual-use items is not an effective means of addressing the problem of CBW proliferation. Much of the equipment and technical data involved in plant construction and operation, such as in the Libyan case, consists of low level technology that is generally available from a large number of sources and is widely traded. Moreover, imposing controls on an increasing range of general purpose equipment and technology could decrease licensing and enforcement effectiveness by diverting resources from transactions which may be more critical to the actual production of dangerous chemical weapons. Increased licensing requirements for transactions that pose no proliferation concerns, in and of themselves, could disadvantage U.S. exporters and deluge the export licensing system with relatively trivial applications.

Question 4.

If chemical controls are expanded, how can they be constructed to stop assistance to Middle Eastern chemical plants while not interfering in general trade in chemicals?

Answer

There are serious difficulties in imposing broad controls on chemical plants because most of the items used in such plants have legitimate peaceful industrial uses.

Legitimate trade could be seriously impaired by broadly constructed controls. We believe that, to avoid interference with general trade, controls should be narrowly focused on chemicals and manufacturing equipment specially designed or useful for chemical weapons. We will continue to examine the potential for improvement in this type of control in concert with our allies through the Australian Group.

Question 5.

An approach to controls suggested by actions now being taken in Germany is closer collaboration with industry to identify problems in advance and warn companies off those projects. Any assistance to identified projects, or those the company knows are producing chemical weapons would be a punishable offense. What is the likelihood that Western governments would name "outlaw" governments or release intelligence information necessary to make such a system work? Could a targeted control regime be constructed banning any assistance to problem projects?

Answer

Close collaboration with industry is critical to the effectiveness of the U.S. CBW non-proliferation policy. We have and will continue to consult with industry on specific sales. We are now working with industry representatives to educate them on "warning signs" of suspicious sales and, in turn, to learn from them the capabilities of countries to obtain or produce chemical weapons.

Public release of suspect projects or countries could endanger our intelligence gathering operations and private diplomacy. Foreign governments share U.S. concerns about publicly identifying problem projects or countries.

The degree of concern over the chemical weapons development programs in various countries differs based on a number of factors, such as the kinds of chemicals involved, the credentials and intentions of a country, and the nature of any governmental assurances concerning use. We are working with our allies and other governments, under the auspices of the Australia Group, to target effectively the real areas of concern for chemical weapons proliferation.

Question 6.

You report precursor chemical licenses are expected to drop from 1200 in 1988 to 200 in 1989. What accounts for this change?

Answer

My testimony indicated that in 1988 we received approximately 1200 individual validated license applications for the export of chemicals currently under export control. These applications include not only precursor chemicals, but also other chemicals that were subject to unilateral national security export controls. My response to a later question may have inadvertently attributed the entire amount to precursor chemicals.

The projected decrease in chemical licenses is expected because unilateral national security export controls on thousands of dual-use chemicals were removed on February 23, 1989, in accordance with amendments made by the Omnibus Trade Act of 1988 to Section 5(c)(6) of the Export Administration Act of 1979, as amended.

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Foreign Policy Studies Program

14 September 1989

Senator Paul Sarbanes
Chairman
Subcommittee on International Finance and Monetary Policy
U.S. Senate
Washington, DC 20515

Dear Senator Sarbanes:

Thank you for your letter of July 5, 1989. I have prepared the following responses to the questions from Senator Garn:

You argue that a verifiable global ban on Chemical Weapons is essential. How likely is such a ban and how verifiable?

The prospects for completion of a multilateral ban on chemical weapons probably are brighter now than ever. The Soviet Union, over the course of the past several years, has agreed to accept Western proposals for verifying compliance with the future Chemical Weapons Convention. President Bush has committed himself to eliminating the "terrible scourge" of chemical warfare from the face of the earth. Finally, the 149 countries participating in the January 1989 Paris Conference on the Prohibition of Chemical Weapons unanimously approved a declaration calling, among other things, for urgent efforts to conclude the global ban on chemical weapons being negotiated in Geneva.

The Chemical Weapons Convention currently being negotiated contains the most ambitious and intrusive verification provisions ever considered in arms control negotiations. It will, for example, require all states that are parties to it to declare information concerning their chemical weapons stockpiles and production facilities, and to permit these declarations to be verified by international inspectors. The chemical stockpiles and production facilities will be continuously monitored until they are destroyed, and during the destruction process itself. Commercial chemical factories will be subject to a variety of data reporting and inspection requirements to ensure that they are not used for illicit chemical warfare production. Finally, as a sort of extra insurance policy, states will have the right to request a snap inspection if they believe that another party is engaged in activities prohibited under the treaty. These verification provisions, coupled with our own intelligence capabilities, should enable the United States to detect any militarily significant cheating far enough in advance to mount an effective response.

Will sanctions assist or detract from the effort to achieve a treaty?

It is difficult to predict what effect the sanctions legislation being considered by the Congress will have on the chemical weapons negotiations. If the United States and other countries adopt national sanctions legislation, it is possible that similar sanctions might be embodied in the chemical weapons treaty draft being negotiated in Geneva.

You suggest several clarifications in S.8 in the areas of standard of evidence, determinations resulting in sanctions, enforcement, and parallel sanctions for U.S. and foreign companies. What changes would you suggest?

Clearly, the primary purpose of the various sanctions bills that have been introduced in the Congress is to deter countries from using chemical weapons and companies from providing the material necessary for developing such weapons. If this objective is to be met, it is imperative that the Congress and the Executive Branch have an agreed understanding of the nature and scope of the Presidential reports on proliferation, the standard of evidence that will be used to determine a violation, and the means by which any sanctions will be enforced. This requires a cooperative effort between the Congress and the Executive Branch.

How can an import ban against foreign companies be paralleled in the case of U.S. companies?

It is important to deter all companies, not just foreign firms, from providing other countries with material that could be used in the development of chemical weapons. Thus any penalties that are proposed for foreign companies must be parailed in the case of U.S. firms. If foreign firms are denied access to the U.S. market, then logically U.S. firms should be denied similar access to foreign markets.

I hope that these responses are helpful to the Subcommittee. If I may be of any further assistance, please do not hesitate to contact me.

Yours Sincerely,

Elisa D. Harris
Senior Research Analyst

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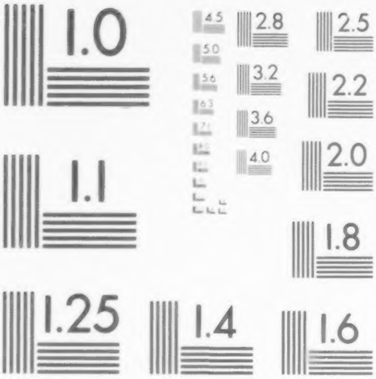
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